50 CENTS

Textile World

APRIL, 1956

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Clean-cut, accessible storage and warehousing has again and again proved its value in time-saving in the textile field. Illustrated is a racked-storage installation, planned by the Textile Engineering Division of Robert and Company Associates. It offers complete floor-to-ceiling storage, with instant package-availability from any level. No need to tear down the stack; center or lower packages can be swiftly reached, with a minimum of handling! This maneuverable aid for mechanized handling represents only one of many Robert and Company plans which have helped textile leaders to realize their profit potential. Asking for an engineering survey *now* means that 40 years' experience is immediately at your service. What has helped others to major progress can be applied to your operation, regardless of your package type or size.

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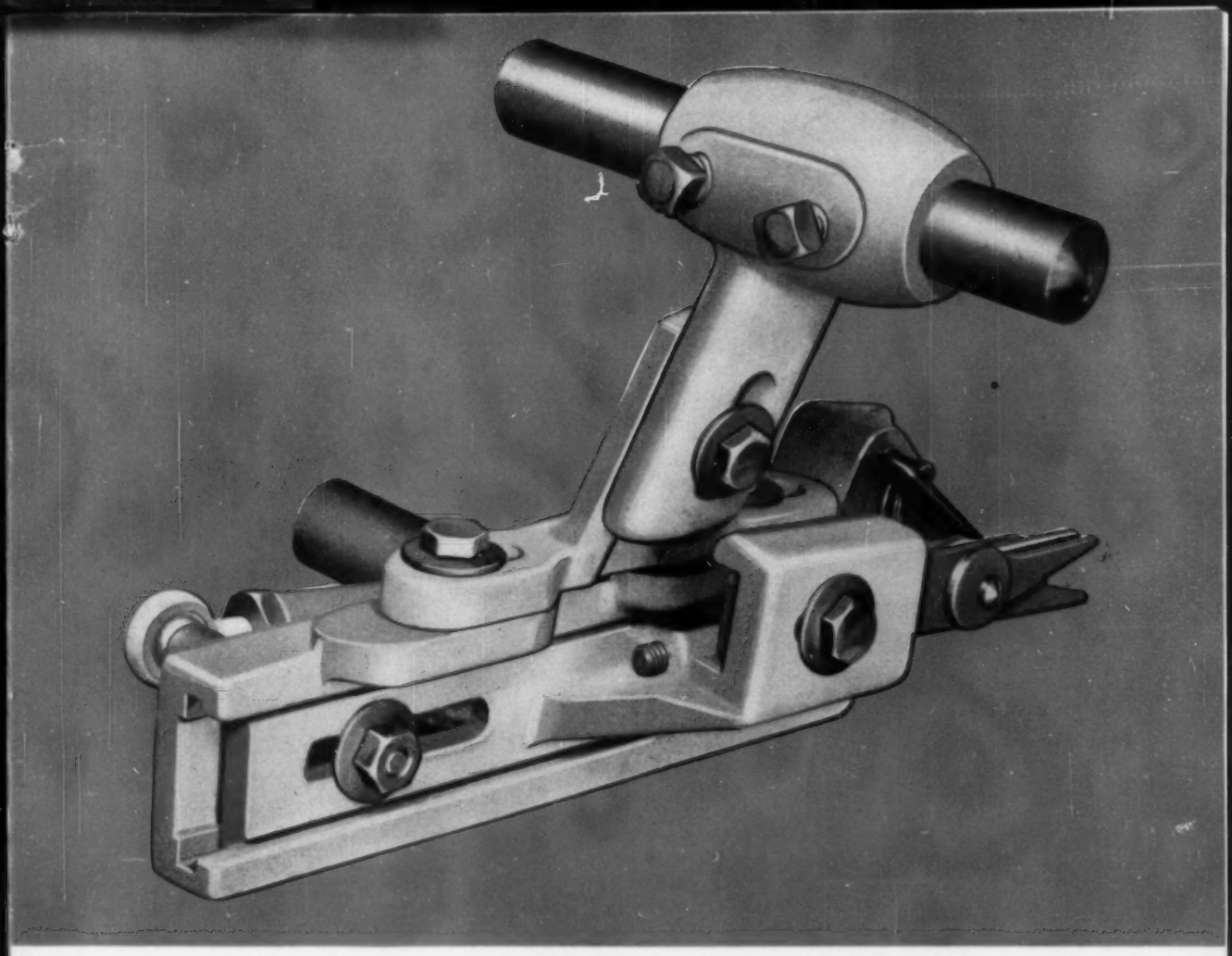

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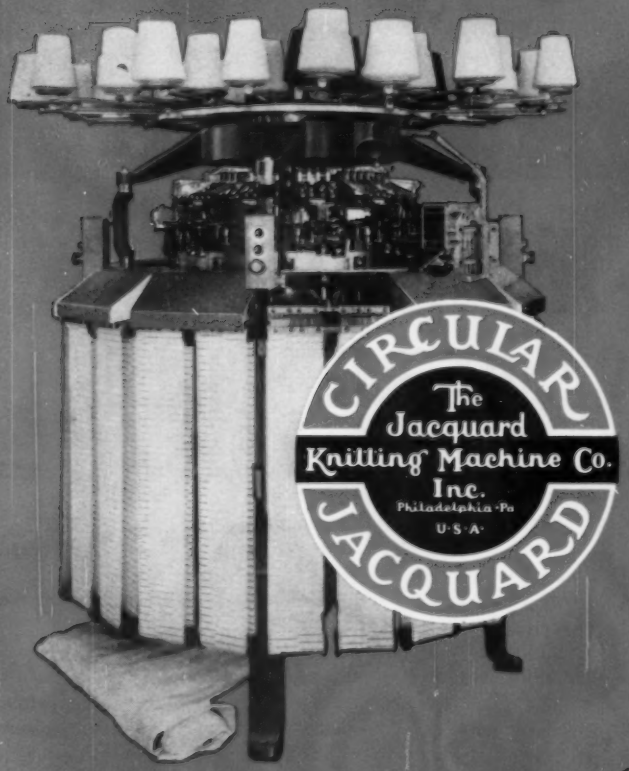

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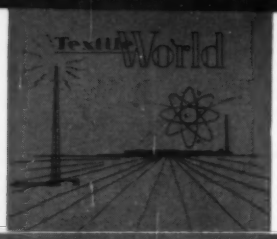

Developments To Watch

THROW-AWAY CLOTHES . . . may give weavers a headache some day. You wear them until they're soiled and then throw them away. The fabric, nonwoven, is being developed by Kimberly-Clark Corp. Waterproof and burn-resistant garments that are being tested for wear include rain capes, wrap-around coats for laboratory workers, doctors' jackets, nurses' uniforms, bathing suits, high-style dresses, and protective uniforms for workers in the field of atomic energy.

PRINTED SOCKS . . . will again be seen in shop windows before long. Burlington Industries is aiming at the sportsman's market by printing ducks, horses' heads, golfers, and trout flies on nylon stretch socks. Printed socks, not very popular in the past, could possibly become a big profit maker, since they can be knitted fast and the design scope is unlimited. This time, the style may click.

COTTON . . . will remain the backbone of apparel despite manmade fibers, says George H. Johnson, vice president, American Institute of Laundering. He admits that synthetics are making inroads on natural fibers in some areas, but he believes that 4-million more bales of cotton will be used annually by 1960.

HIGH-TENACITY RAYON . . . will find increasing uses this year in belting, industrial hose, sewing thread, and similar products. About 30-million lbs. went into these uses last year.

COATED FABRICS . . . made from synthetics will replace 70% of the industrial cotton duck now used by 1960, says Sy Hyman, president, Herculite Fabrics. He further predicted that coated fabrics would enter the apparel field and that conventional stitching may be replaced by electronic heat-sealing.

INTERLOCK UNDERWEAR . . . with knitted-on ribs can be made on a new 24-cut machine developed by Morris Philip, of Philip Knitting Mills. The fabric, made with true 1x1-rib cuffs, separating thread, and roll welt, probably also will be used for children's sleepers, men's shirts, and women's blouses.

DENIM COMING BACK? . . . Manufacturers of denim and blue jeans jumped for joy when *Parent's Magazine* released the results of a recent survey on children's clothing habits. Of the families polled, 100% of the 10-to-17 age group own one or more pairs of blue jeans. In addition, 97% of the children under 10, two-thirds of the wives, and one-half of the husbands wear them. This report prompted manufacturers to express optimism for 1956, despite the trend toward teen-age "dressing up."

TUFTED CARPETS . . . may be made from high-bulk Orlon yarns when experiments with 10-den. filament yarns are completed. The yarns have the advantage of high resiliency, a property required for good-quality carpeting.

"MOSAIC" HOSIERY . . . may develop into a new take-off from the conventional argyle sock. Unlimited patterns in solid colors can be made on argyle knitting machines, and we'll probably see some weird and fantastic sock designs. H. E. Crawford Co. now refers to its argyle hosiery as "mosaics."

PACKAGED TEXTILES . . . are on the upswing. Consumers like them, and some textile manufacturers are finding that this method of merchandising is helping to keep their costs down by increasing sales. Retail stores expect to sell 50% of their textile products in packages by 1960.

EXCISE TAX ON FABRICS? . . . Rep. W. R. Poage (D. Tex.) is reported to have come up with a plan to place a $315-million per year excise tax on synthetic-fiber and cotton fabrics to finance direct payments to cotton growers to bring their returns to 90% of parity if government supports are dropped to 75%. Rep. Poage says that the plan would lower the price of raw cotton $22.50 per bale and would "tend to equalize the price of man-made-fiber fabrics as compared with cotton."

COTTON EXPORTS . . . will have to be boosted to 5.5-million bales yearly if the U. S. is to "regain and retain a fair share of the world market," says Alan G. Patterson, president, American Cotton Producers Associates. The U. S. share of the export market dropped from 39% in 1951 to 20% in the marketing year ended last Aug. 1, and a further drop is in prospect for the current year.

STRETCH-NYLON SOCKS . . . may be reducing the production of men's hosiery. The decline in production from 50,154,390-doz. pairs in 1954 to 47,150,029-doz. pairs in 1955 is probably due to the increased wear of stretch-nylon socks, says W. F.

CONTINUED ON PAGE 6

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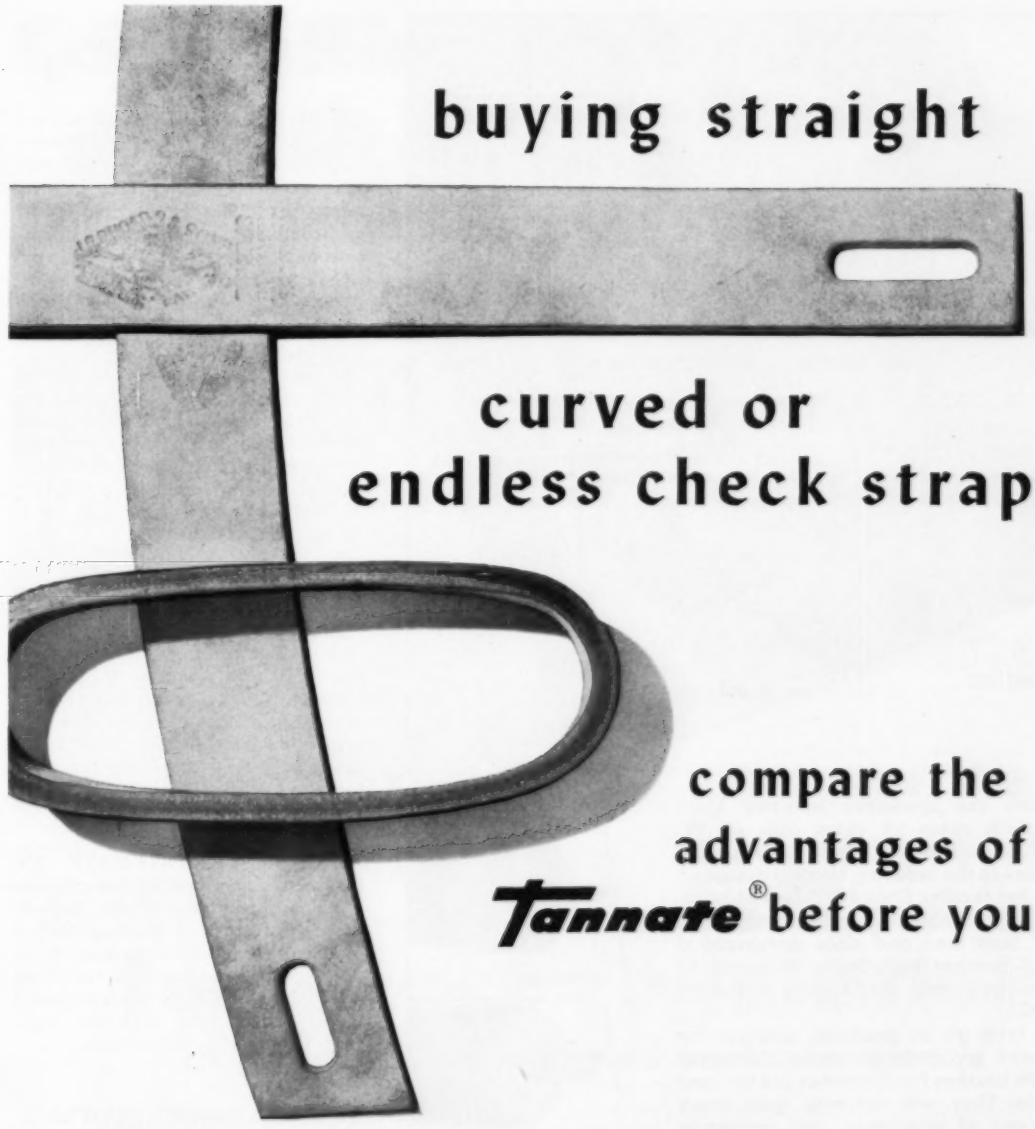

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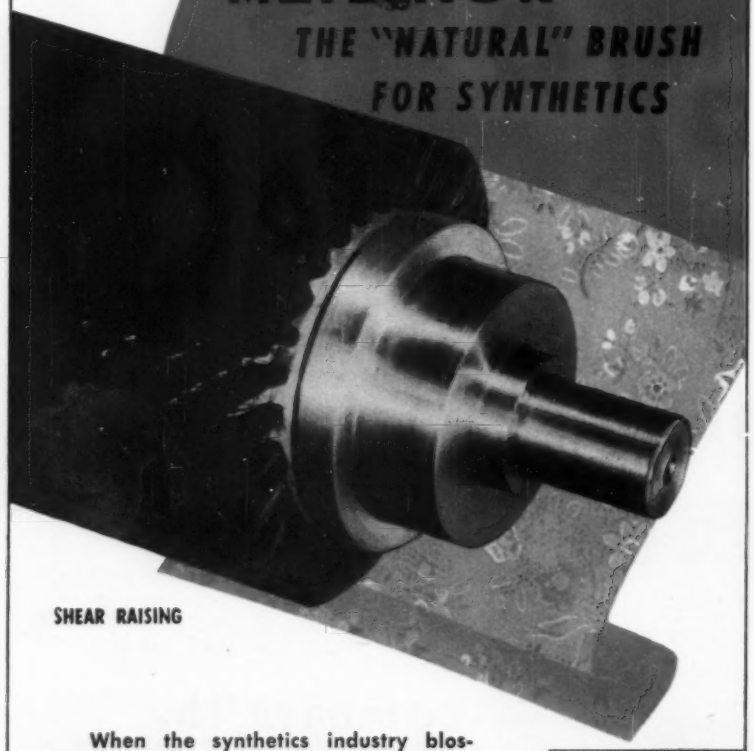

SHEAR RAISING

When the synthetics industry blossomed forth some 25 years ago, M. W. Jenkins' Sons brought their considerable experience to the industry. Having designed brushes for textiles since 1877 and keeping abreast of technological advances, M. W. Jenkins' Sons then and since developed a series of brushes specifically designed to meet the new and challenging problems presented.

As with all its products, whether for the textile or other industries, Jenkins' METLKOR brushes for synthetics are the best available. They will not sag, split, crack or get out of alignment, are uniformly tufted, filled, trimmed and spaced to give uniform performance. Set in flat wire, they are wound about a permanent metal core which can be rebristled with the same or any other desired bristle.

For any problem requiring brushes, M. W. Jenkins' Sons is prepared to supply a standard or special brush to meet your need.

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Williamson, president, National Association of Hosiery Manufacturers.

INCREASED COSTS . . . as a direct or indirect result of the $1 minimum wage have led some woolen and worsted producers to boost the price of fabrics 3 to 5%. By the time the increase reaches retail level next fall, clothing prices are expected to be 5 to 8% higher.

CUSTOM-MADE CARPETS . . . will soon be available for the average buyer. Individual size, shape, color, and design can now be machine-tufted of skein-dyed 100% virgin wool for 50% less than handmade carpets, says Richard C. Kline, president of Carpet Fashions Unlimited, Inc.

WAGES MAY BE UPPED . . . in Northern cotton and rayon mills if the Textile Workers' Union has its way again. Contract negotiations in more than 100 mills will be reopened this spring, and the union already has served notice that it "intends to gain substantial wage increases and fringe benefits." Wool mills face the same problem.

THE 7% FREIGHT-RATE INCREASE . . . which became effective Feb. 25, may force textile mills to make greater use of trucking lines, a practice that has been growing in recent years. Four Southern textile associations have filed a protest against higher freight rates with the Interstate Commerce Commission.

JAPANESE EXPORT QUOTAS . . . self-imposed, may not carry over into future years, Japanese authorities in Tokyo admit.

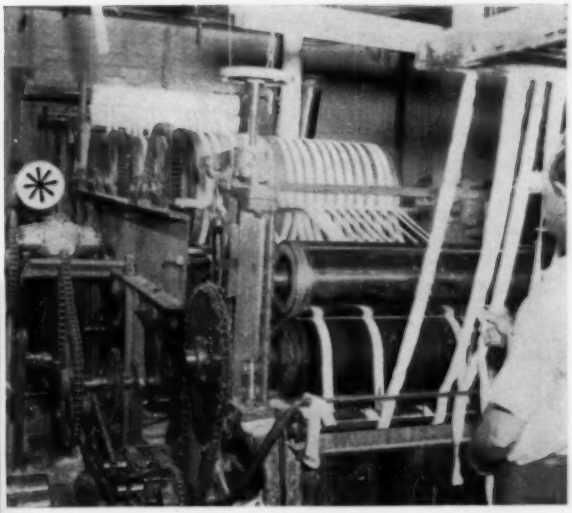
FORTISAN WEBBING . . . may replace rigid supports in a new lightweight military tent now under development. The tents have better portability and require less storage space.

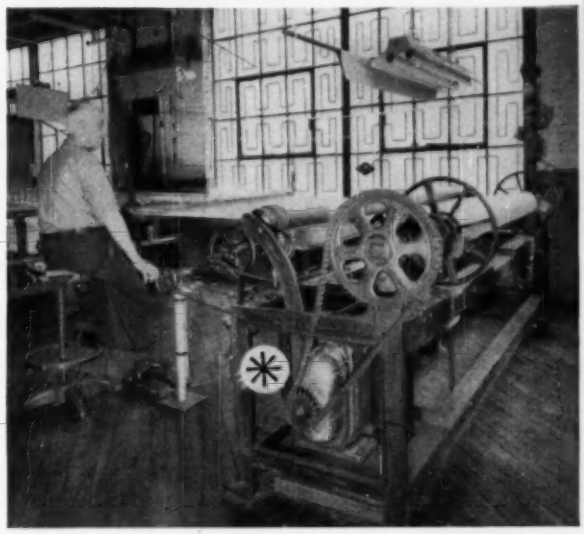
"MODIFIED ACRYLIC" FIBER . . . named Verel has been announced by Eastman Chemical Products, Inc., whose associate, Tennessee Eastman Co., is turning out pilot-plant quantities of 2-, 3-, 5-, and 8-den. staple at Kingsport, Tenn. Commercial production is scheduled for October.

CONTINUED ON PAGE 218

Controlling stretch...

Fully-enclosed, self-lubricating P.I.V. provides proper stretch of elastic fabric drying on drums. Speed can be instantly varied within a ratio of 2 to 1 by turn of a hand wheel *while machine is operating.*





...or preventing it

P.I.V. fitted with remote mechanical control enables operator to quickly and conveniently change beaming speed as minutely as desired to suit quality, ply or strength of cotton yarn being wound.

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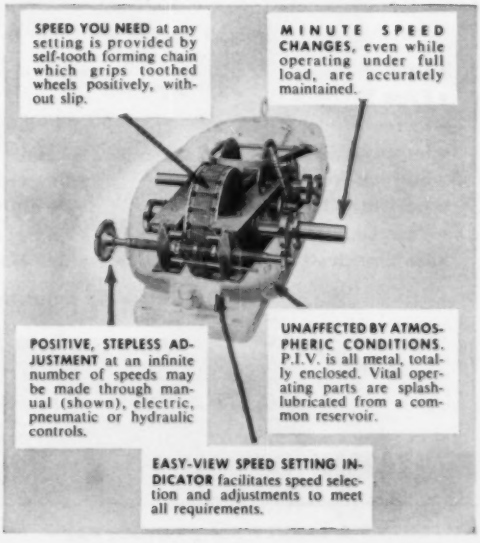
Versatile P.I.V. drives are made in 8 sizes, 16 types, from ½ to 25 hp. Let your nearest Link-Belt office or authorized stock-carrying distributor know your needs or send for 88-page Data Book 2274.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Letters From Readers

What's on your mind?

We welcome your comments. Whether you agree or disagree, with us or anybody else, we will be glad to have you air your views.

Unless you ask us not to, we will use your name and company connection when your letter is printed. If you prefer to have your opinions appear unsigned, we will respect your confidence by using only a set of initials.

Write to Editor, Round Table, TEXTILE WORLD, 330 W. 42nd St., New York 36, N. Y.

LAFAYETTE'S PEOPLE

Dear Editor:

We have read with much interest your recent story on the reopening of the LaFayette Mill in Georgia [TEXTILE WORLD, Jan., '56, p. 67].

Your telling the story with people in the mill was extremely effective, for they certainly were the people most affected by the shutdown and most exuberant about the reopening.

COTTON MANUFACTURERS ASSN. OF GEORGIA

Atlanta, Ga.

QUICKER WAY TO COUNT NEPS

Dear Editor:

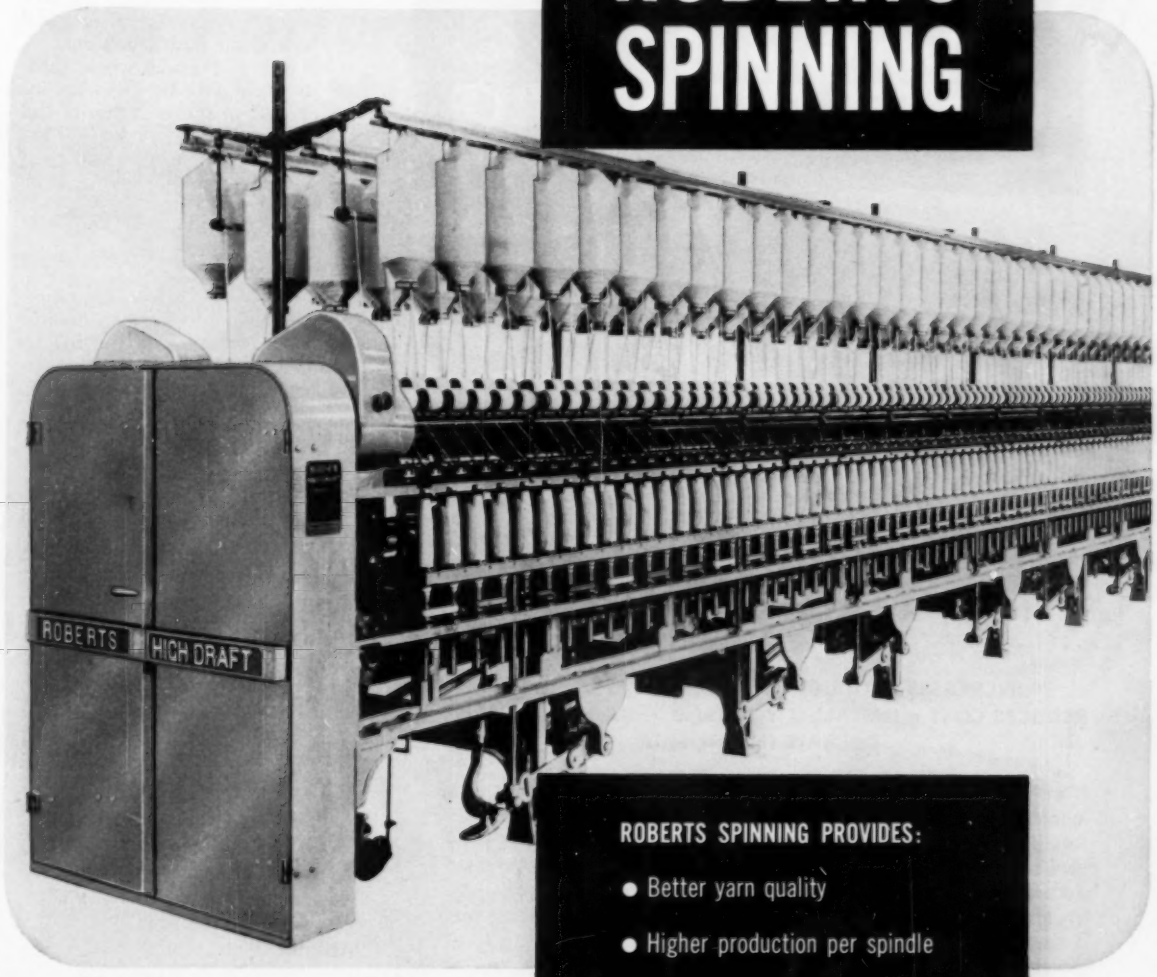
"How To Calculate Neps" [TEXTILE WORLD, Jan., '56, p. 149] interested us.

We agree that neps per grain is the method most easily understood by card-room men, as well as the most accurate way of comparing neps when different weights of sliver are run. This fact is particularly true when a comparison is being made of the neps in the card sliver produced by a number of mills.

At one time we brought sections of the card web to the laboratory, counted the neps, and actually weighed the web on a precision balance to arrive at the accurate number of neps per grain. This procedure involved a little too much time; so we bought a nep-counting template, developed by N. C. State College School

For more information, write direct or use Reader-Service post card.

ROBERTS SPINNING



ROBERTS SPINNING PROVIDES:

- Better yarn quality
- Higher production per spindle
- Increased package sizes
- Lower maintenance expense
- Lowest first cost

COMPARE ALL 3

For high production, top yarn quality, and dependability, Roberts Spinning is second to none in America today—and, at the lowest investment per spindle!

2¼ MILLION SPINDLES

In Changeovers and complete Frames—Roberts Spinning has been overwhelmingly accepted by American mills—over 2¼ million spindles now equipped with ROBERTS HIGH DRAFT.

Available in 39 inch, 36 inch and the new Roberts 25 inch width Frames.

All standard features used on Roberts Spinning Frames can be adapted as Changeovers to your existing frames.

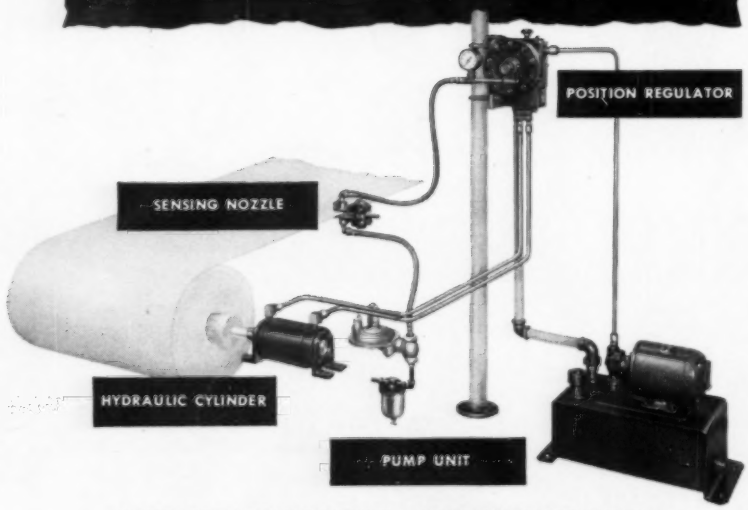
ROBERTS COMPANY

SANFORD, NORTH CAROLINA

 For more information, write direct or use Reader-Service post card.

NOW

ASKANIA
Cloth Guide Control for LIGHTER DUTY SERVICE



INCREASES PRODUCTION • IMPROVES QUALITY
REDUCES COST • INSTALL IT YOURSELF • MAINTAIN EASILY
OPERATE IN ANY MILL

• Now *automatic* cloth guide control can be used with the small textile machine to get the *same* production increase, cost reduction and improved quality already obtained with larger equipment...and at a lower investment cost!

A VERSATILE PACKAGE

The Model "500" ASKANIA Edge Guide is furnished as a complete package designed and engineered specifically for use on small equipment. It provides accurate edge control on pay-off, windup or steering rolls. It can be applied to *any* size warp on a small machine in *any* mill. Your own mill mechanics can install it! Your own equipment is the only limit to the accuracy you can obtain. *The precision with which examining, slitting and other operations are regulated is a major production factor.* Perfect alignment at high speed is a feature that means greater profit in your mill.

Nothing contacts the moving warp. A *jet of air* actuates the controller. The exclusive ASKANIA cloth guide measures warp errors of less than .005 of an inch, converts the air stream into a hydraulic force that applies the work cylinder to the job.

You'll want further information. Write for Bulletin No. 166, Askania Regulator Company, 274 East Ontario Street, Chicago, Ill.

ASKANIA REGULATOR COMPANY

"CONTROLS FOR INDUSTRY"

HYDRAULIC, ELECTRONIC CONTROLS & SERVOS, GENERAL SYSTEMS, ENGINEERING & COMPUTER SERVICE, VALVE ACTUATORS & CYLINDERS

A Subsidiary of General Precision Equipment Corporation

of Textiles.

This template has 20 holes. Each hole is 1 sq. in. We make three nep counts on each card web tested and average the number of neps. At present our card sliver weighs 56 grains per yard and the cards are 40 ins.

One yard of the web would therefore be 40x36 ins., or 1,440 sq. ins. The number of square inches of web per grain would be:

$$\frac{1440}{56} = 25.71$$

The nep-counting template has 20 holes,

$$\therefore \frac{25.71}{20} = 1.2855 \text{ (constant)}$$

By multiplying the average number of neps in 20 sq. ins. of the 56-grain sliver by 1.2855, you can get the number of neps per grain.

The constant for 60-grain web would be:

$$\frac{1440}{60} = 24.00$$

$$\frac{24.00}{20} = 1.20$$

The constant for 40-grain web would be:

$$\frac{1440}{40} = 36.00$$

$$\frac{36.00}{20} = 1.80$$

H. L. PRATT
West Columbia, S. C.

IDEAS FOR DENIM

Dear Editor:

While glancing through my husband's copy of TEXTILE WORLD, I noticed the item "Denim Will Suffer." No need for that!

Here are a few ideas for further use of denim. I know a number of them have been carried out successfully. Some are common and others not.

Bedspreads (appliqued for children)
Slipcovers, contrasting trim
Upholstering
Drapes—reversible, plaid or striped and plain.
Room dividers, especially for children's rooms, reversible and made in sections
Folding doors
Backing for hooked rugs (woven loosely)
Card-table covers
Knitting bags (use a nubby filling)

There's no end to the use of denim.

Hope this sparks a little business in that line. After raising a large family and using it for years, I can't imagine a world without denim.

MRS. R. E. BERTRAND
Holyoke, Mass.

For more information, write direct or use Reader-Service post card.

Can I afford a Towmotor ?

You can! Typical savings produced by Towmotor Fork Lift Trucks are revealed in recent Certified Job Studies which show that: For one company, one Towmotor Fork Lift Truck paid for itself in 10 months. For another company, six Towmotor units saved $50,000 in a single year.

It's an amazing fact that most companies now using outdated materials handling methods are, through hidden costs, already paying the price of Towmotor equipment. To discover how you can save money on your materials handling, call your Towmotor representative today! . . . or write for Certified Job Studies covering your industry. TOWMOTOR CORPORATION, Div. 2204, 1226 E. 152nd St., Cleveland 10, Ohio.

Read how a Cotton-Warehousing Company reduced handling costs 71%.

Ask for Job Study #109

THERE'S ONLY ONE FORK LIFT TRUCK CALLED TOWMOTOR

America's ***best engineered*** *fork lift truck*

TOWMOTOR
THE ONE-MAN-GANG ®

See the TOWMOTOR EXHIBIT mhi **Cleveland Auditorium - June 5-8**

News about

B. F. Goodrich Chemical *raw materials*

Hycar latex sizes... upgrade cotton fabrics, improve hand, washfastness and wear life

SIZES made from Hycar latex (dispersions of Hycar nitrile rubber in water) are as much as 300% more effective than starch sizes in improving wear resistance in cotton fabrics. (Tests made under Federal Specifications CCC-T-191-B, with Stoll Universal Wear Tester.) At the same time Hycar gives a soft, yet full, hand and increases resistance to stain and fading.

Blends of Hycar with urea or melamine formaldehyde (used for increased crease resistance) bring back and even exceed the fabric tear and abrasion strength lost by the addition of urea or melamine formaldehyde alone.

Wool, as well as cotton, comes in the picture with Hycar latex used as an after-treatment to reduce crock, particularly with red naphthol dyes. With cotton and rayon Hycar is used as a binder for pigment coloring and printing.

In cotton it is used as a carrier for such agents as fungicides and flame-proofing chemicals and as a binder for waxes and metallic salts used for water repellency or stain resistance.

What can Hycar latices do for you? For complete information please write Dept. EV-2, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

B. F. Goodrich Chemical Company

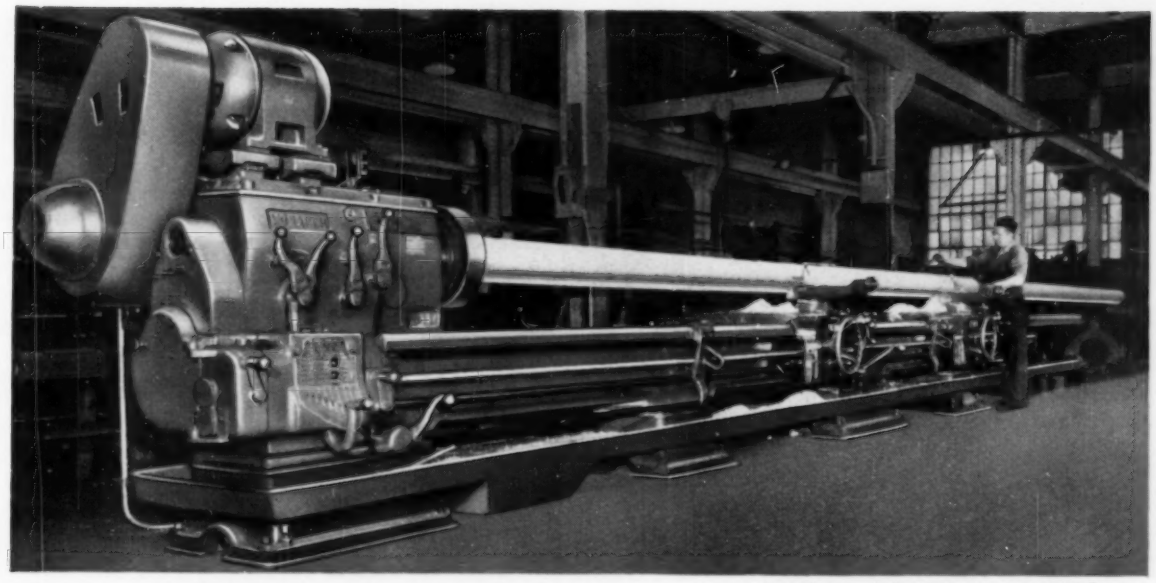
A Division of The B. F. Goodrich Company

Hycar

Reg. U. S. Pat. Off.

American Latex

GEON polyvinyl materials • HYCAR American rubber and latex • GOOD-RITE chemicals and plasticizers • HARMON colors



Monarch engine lathe turning take-up roll 650" long.

It takes Machines like this...

(plus C&K "know-how")

C&K Felt Loom, Type F-2 650" between swords, 13 harness (8/10" space) 3 x 3 box. Shown in service at Albany Felt Co., Albany, N. Y.

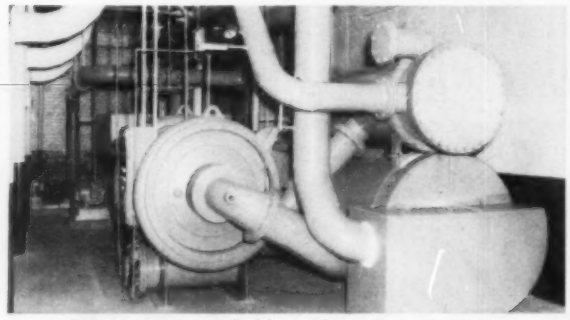
...to make Looms like this

This giant C & K Loom . . . *55 feet between swords* . . . produces papermakers' wool felts that are used in manufacturing the paper on which this message is printed.

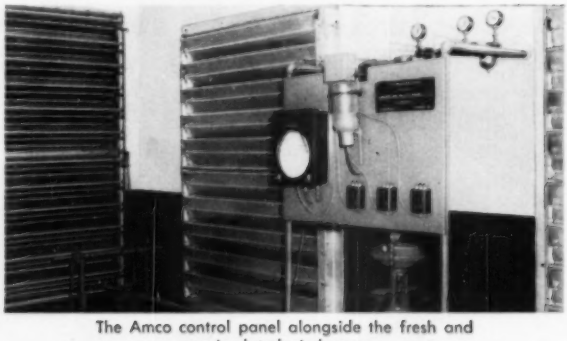
CROMPTON & KNOWLES
Loom works
WORCESTER 1, MASSACHUSETTS, U. S. A.
CHARLOTTE, N. C. • PHILADELPHIA, PA. • ALLENTOWN, PA.
Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.
Crompton & Knowles of Canada Limited, Montreal, Quebec

This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Fabrics . . . which are **WOVEN** Fabrics.

Card room at Highland Park Mfg. Co., Mill No. 1, Charlotte, N. C. Ductwork and zone control atomizers are part of Amco's central station system, designed by J. E. Sirrine Company for the entire mill.



Refrigeration is supplied by a 350-ton Trane Centravac unit located in the basement.



The Amco control panel alongside the fresh and recirculated air louvers.

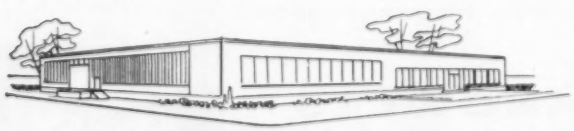
This ECONOMICAL split-system by Amco

provides thoroughly conditioned air, with maximum operating efficiency

Whether your need is for one room, or an entire mill, Amco offers air conditioning to meet your requirements. Amco designs and installs all types of systems — humidification alone; or in combination with cooling, such as in the ductless evaporating cooling system; unit dry-duct systems; or central station systems.

The central station system Amco recently completed at Highland Park Mill is a good case in point. In order to effect savings, it was felt advisable not to install the excess air capacity found in conventional design. Instead, Amco installed a "hand tailored" split system using a smaller central station unit augmented by room atomizers, thus reducing both initial cost and operating cost. This system provides complete control with even greater flexibility of operation. Savings have been substantial.

Amco engineers will be glad to work out a solution to any problem you may have. Next time call on Amco for reliable advice. There is absolutely no obligation.



New Cleveland-Rowan Plant of the American Moistening Company. This modern plant is located at Cleveland, N. C., for the fabrication of duct work and sheet metal products.

AMCO

AIR CONDITIONING SYSTEMS since 1888

AMERICAN MOISTENING COMPANY, PROVIDENCE, R. I. • ATLANTA, GA. • BOSTON, MASS. • CAMDEN, N. J. • CLEVELAND, N. C.

FACTS

about

NEW DEPARTURE

BALL BEARINGS

Another "NEW DEPARTURE"!
Pocket-size calculator
calculated to cut costs!

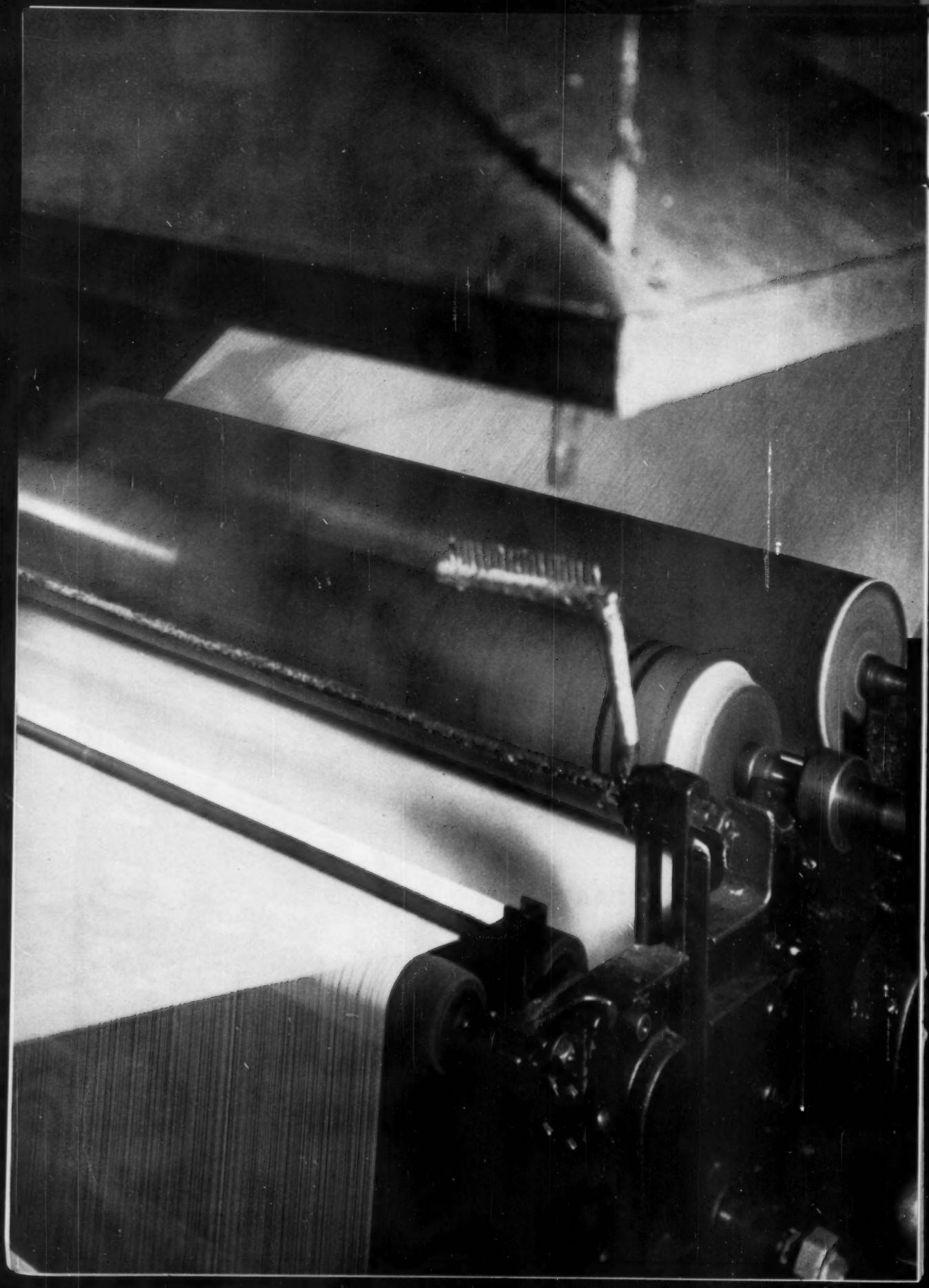
Prices at your finger tips for over 100,000 different bearings! This "new departure" in the bearing industry lists basic engineering data, simplifies ball bearing selection, helps engineers figure design costs.

Instant information is available on New Departure's complete line of standard industrial bearings . . . and most important, the calculator cuts costs for buyers by spotlighting savings with low-cost, high-volume *standardized* ball bearings.

Ask your New Departure sales office about it . . . it's another New Departure "first" in ball bearings!

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONN.

 For more information, write direct or use Reader-Service post card.

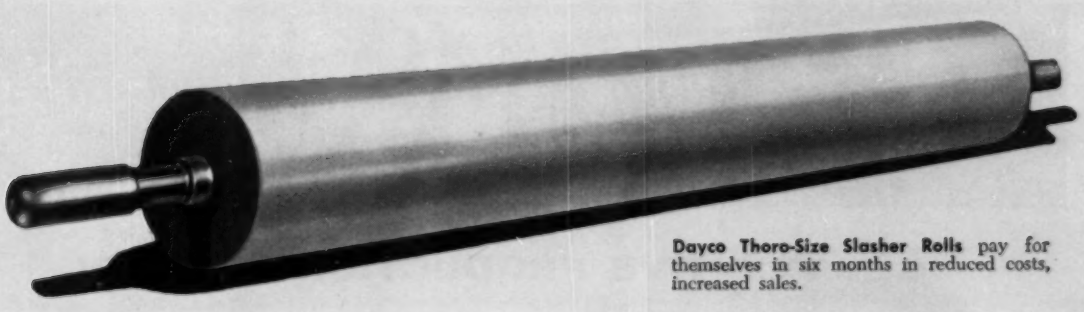


Sales up... sizing costs down

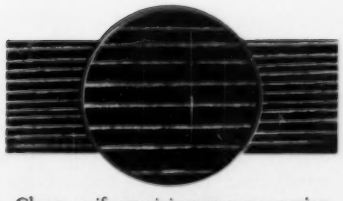
WITH DAYCO SLASHER ROLLS

You can produce finer, more attractive, more saleable cloth . . . and cut sizing costs with Dayco's new Thoro-Size Slasher Rolls. The result of 11 years intensive research, their remarkably resilient surface accurately controls sizing within desired limits. Result: More uniform yarn.

Seamless, Daycos cannot damage fibers, streak, spot or leave roll marks . . . need absolutely no warm-up or soaking . . . require no covering . . . remain in position when changing sets—all features which cut slashing costs. Get immediate improvement in the quality of your sized yarn and at the same time cut slashing costs. Install Dayco Thoro-Size Slasher Rolls in your mill.



Dayco Thoro-Size Slasher Rolls pay for themselves in six months in reduced costs, increased sales.



Clean, uniform sizing proves superior performance of Dayco slasher rolls

Irregular sizing denotes inadequate control of ordinary slasher rolls

For full information on Dayco Thoro-Size Slasher Rolls write Dayton Rubber Co., Textile Div., 401 National Bank Bldg., Greenville, S. C.

Dayton Rubber 51 YEARS OF PROGRESS

Dayco and Dayton Thorobred Textile Products for Better Spinning and Weaving

© D. R. 1956

THIS RULE OF THUMB IS COSTLY!

GET POSITIVE PRODUCTION CONTROL

with IBM punched card systems!

To "*old timers*" this cut stick technique of measuring the warp may seem just as good today as it was 40, 80, or 100 years ago!

But in *today's* "high style" market—with textiles in greater demand, and competition in fabrics on the increase—alert textile management wants . . . and can get from IBM . . . *positive* and cost-saving production controls.

With IBM punched card mill accounting you get accurate, up-dated warp inventory and production progress reports. With these timely facts you prevent "overruns" of slow-moving items and quickly reschedule high-demand fabrics. *Now* you save "down time" on looms and achieve a tight cost analysis of each item. By-products of IBM punched card production control include: efficiency reports, payroll, quality control and other accounting functions.

Long experience and much pioneering in the field of mill accounting by IBM are your assurance of qualified service and complete cooperation in adapting these cost-saving methods to *your* particular problem. Call your local IBM representative, or write: TEXTILE DEPARTMENT A-56, International Business Machines Corporation, 590 Madison Ave., New York 22, N. Y.

IBM DATA PROCESSING

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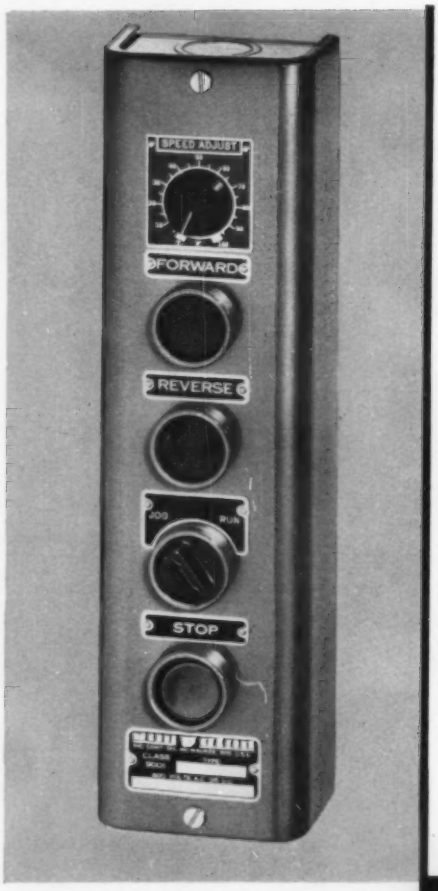
COMPLETE PLANTS ANYWHERE IN THE WORLD

UNIONMATEX



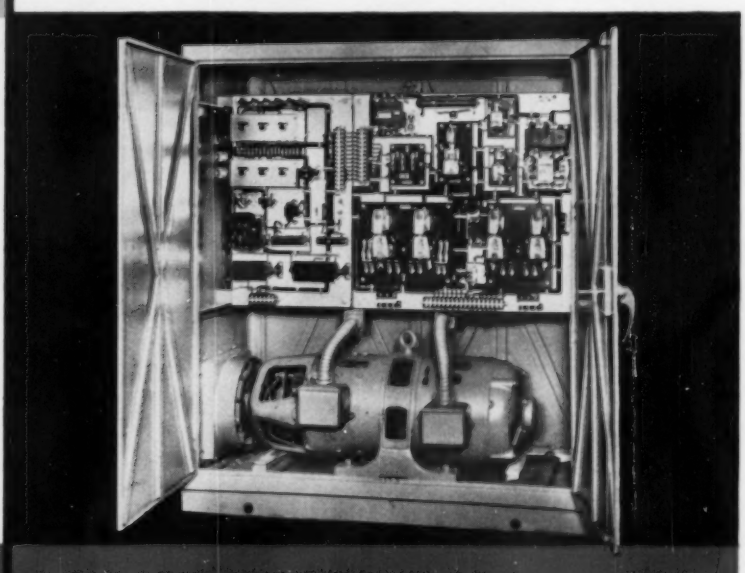
The "Unseen Hand" at the Controls . . .

AUTOMATICALLY SENSITIVE

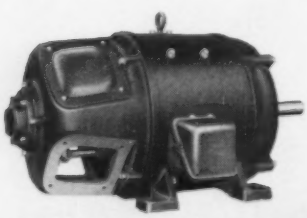
Performance-Rated©

Century SELECTIVE SPEED DRIVE

More accurately than the most experienced operator, Performance-Rated Century Selective Speed Drives *automatically* adjust motor speed to meet operating requirements. Speed changes are integrated with varying pressure, temperature, viscosity or size of the material being worked. You can also use Century Selective Speed Drives for starts, stops and jogs—forward or reverse—as required.



For full information and assistance on any motor drive application, AC or DC, call your nearest Century Sales Office . . . or write us direct.



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Performance-Rated
1/8 to 400 H. P.

CENTURY ELECTRIC COMPANY

1806 Pine St., St. Louis 3, Mo. • *Offices and Stock Points in Principal Cities*

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DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT *Ingolstadt/Donau* GERMANY

SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!

SPINNING MACHINERY FROM INGOLSTADT THROUGHOUT THE WORLD!

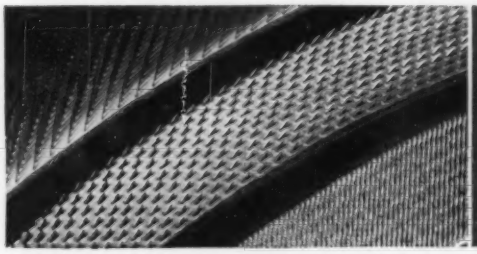
SPINNING MACHINERY

FOR COTTON · ARTIFICIAL STAPLE FIBRE AND WORSTED

Planning and supply of complete spinning plants based
on latest experience in spinning technology and mechanical engineering
Spares for spinning machinery · Conversions of draft systems

VIRL

DEUTSCHER SPINNEREIMASCHINENBAU INGOLSTADT *Ingolstadt/Donau* GERMANY



Ashworth Tips ON CARDING

No. 28 in a Series

CONTROL OF AIR CURRENTS

Much has been written and said about air currents on the revolving flat card. We, as a card service organization, know that these air currents are generated by the speed of the lickerin and cylinder. We also know that the screens under the lickerin and under the cylinder, and the plates around the cylinder, are put there to control these air currents.

We have learned that the screens must fit properly and be of the correct contour to permit setting exactly to gauge at all setting points. This same thing is true of the various plates at the front and back of the card. The make-up pieces on the lickerin bonnet and on the doffer bonnet should also be made to fit your particular model of card.

Unless these screens and plates function as they should, you cannot expect to control the amount of waste and fly or the quality of work produced by your cards. To enable you to do this to the best of your ability, we offer the following suggestions:

1. Institute a regular inspection schedule on screens, plates, and make-up pieces.
2. Obtain these parts from only reputable manufacturers who know their business.
3. Have your maintenance men work very closely with your card grinders in the inspection of present screens and plates, and check on the ability of these parts to be properly set to gauge at all setting points.
4. Be particularly critical of new screens and plates.
5. Set up a once-a-year cleaning schedule on cylinder screens, this to be in addition to any inspections made. The lickerin screen is usually cleaned when the back of the card is re-set.
6. By following regular inspection and cleaning schedules and being certain that screens and plates are made for your particular make and model of card, you will have control over the air currents. The end result will be control of waste at the card, longer life of card clothing, and better quality of card sliver.

ASHWORTH BROS., INC.

American Card Clothing Co. (Woolen Division)

Fall River*†‡ Worcester‡ Philadelphia*†‡ Atlanta†‡
Greenville*†‡ Charlotte†‡ Dallas†‡ (Textile Supply Co.)
E. G. Paules, Representative — Los Angeles, Calif.
*Factory †Repair Shop ‡Distributing Point
3 Factories • 6 Repair Shops • 7 Distributing Points

PRODUCTS AND SERVICES

Clothing for Cotton, Wool, Worsted, Silk, Synthetic Fibre and Asbestos cards and for All Types of Napping Machinery. Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Topflats Reclothed.

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Ashworth PIONEERS IN CARD CLOTHING

3 FACTORIES • • • 6 REPAIR SHOPS • • • 7 DISTRIBUTING POINTS

NOPCOSIZE® N

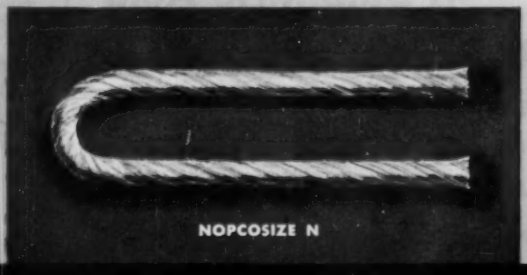
sizes producer's twist and stays flexible!

Yes, it's true! New Nopcosize N stays completely pliable even in the extra-heavy sizing necessary for low twist nylon because it's *internally plasticized* by a special process. Nopcosize N doesn't merely coat —it actually penetrates between the filaments giving proved bonding.

With conventional size, the amount must be limited by its stiffness, but, because Nopcosize N *is* pliable, a greater depth of size protection is possible . . . your best safeguard against filament breakage. This flexibility also prevents Nopcosize N from becoming brittle, flaking off, and acting as an abrasive.

Best of all, fabrics made from warps sized with Nopcosize N scour out to the cleanest goods this industry yet has attained. Internal plasticizing allows depth of protection without causing tear drops, so you're assured of smooth, flawless material.

This all means less time-and-money-consuming extra steps for you. And this clear, aqueous product is so easy to use. Ordinary temperature and concentration changes will never affect its working viscosity. But prove to yourself that Nopcosize N will solve your nylon sizing problems.
Nopco Chemical Co., Harrison, N. J.



SEE THE DIFFERENCE! This enlargement shows how much more flexible yarn is when sized with Nopcosize N. Yarn on the left was sized with 2¼% Nopcosize N. Yarn on the right was sized with 2% of a conventional size.

NOPCO

PLANTS: Harrison, N. J. • Cedartown, Ga. • Richmond, Calif.
London, Ont. Canada

NOPCOSIZE N—*your best defense against:*

POOR SCOURING
FILAMENT BREAKAGE
TEAR DROPS
ABRASION

 For more information, write direct or use Reader-Service post card.

REYNOLDS ALUMINUM YARN

(with Mylar*)

WITHSTANDS ALL THESE TESTS AT BOILING TEMPERATURES

WITHOUT TRACE OF DELAMINATION, DISCOLORATION, DETERIORATION!

1. Soap **2. Hydrogen Peroxide**
3. Stripper Solution **4. Sulphuric Acid**
5. Sodium Carbonate **6. Strong Bleach**
7. Water... ***plus resistance to all common dry-cleaning solvents!***

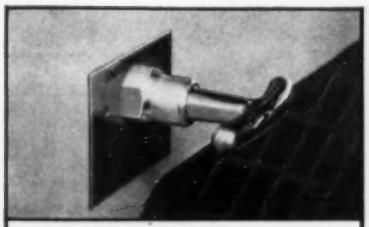
Reynolds Aluminum Yarn with Mylar* closely approaches the *virtual indestructibility of Mylar film itself*. Reynolds, pioneer in the use of this DuPont film, has perfected new adhesive and laminating techniques which alone make this yarn possible. It is exclusive with Reynolds. For full details, call any Reynolds Sales Office (all principal cities). Or write to Reynolds Metals Company, General Sales Office, Louisville 1, Kentucky. Canadian Representative: Yarntex Corp., Ltd., Montreal.

REYNOLDS ALUMINUM YARN

The Glamour Gleam in Fine Fabrics
...by the Makers of Reynolds Wrap

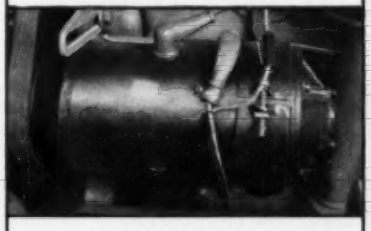
*DUPONT TRADE MARK FOR ITS POLYESTER FILM

For more information, write direct or use Reader-Service post card.



Emergency cutout switch breaks all electrical contacts in system.

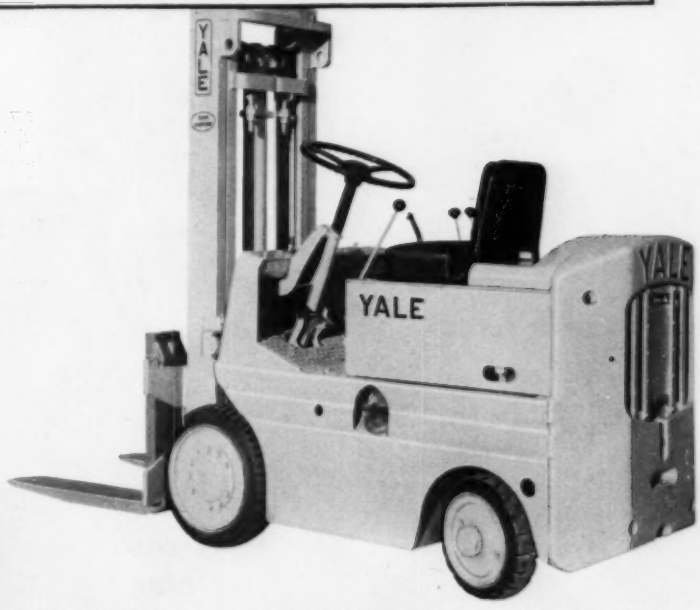
Fuel system designed to eliminate syphoning.



Generator and starting motor are totally enclosed.

The only Gas Truck safe enough to get GS Approval!

YALE KG51 SERIES



POSITIVE EXHAUST CONTROL

Flame suppressor (top) and cyclone muffler (bottom) prevent emission of hazardous sparks and flames.

The Yale KG51 Series Gas Truck is the only truck of its type that is GS Approved by Underwriters' Laboratories (U.L. File No. AU-1572). It satisfies all the requirements of the National Fire Protective Association for safe use where combustible fibers or containers of hazardous liquids or gases are being handled in storage. Incorporated into the design are all of the safety features required by Underwriters' Laboratories GS specifications, including those shown at left.

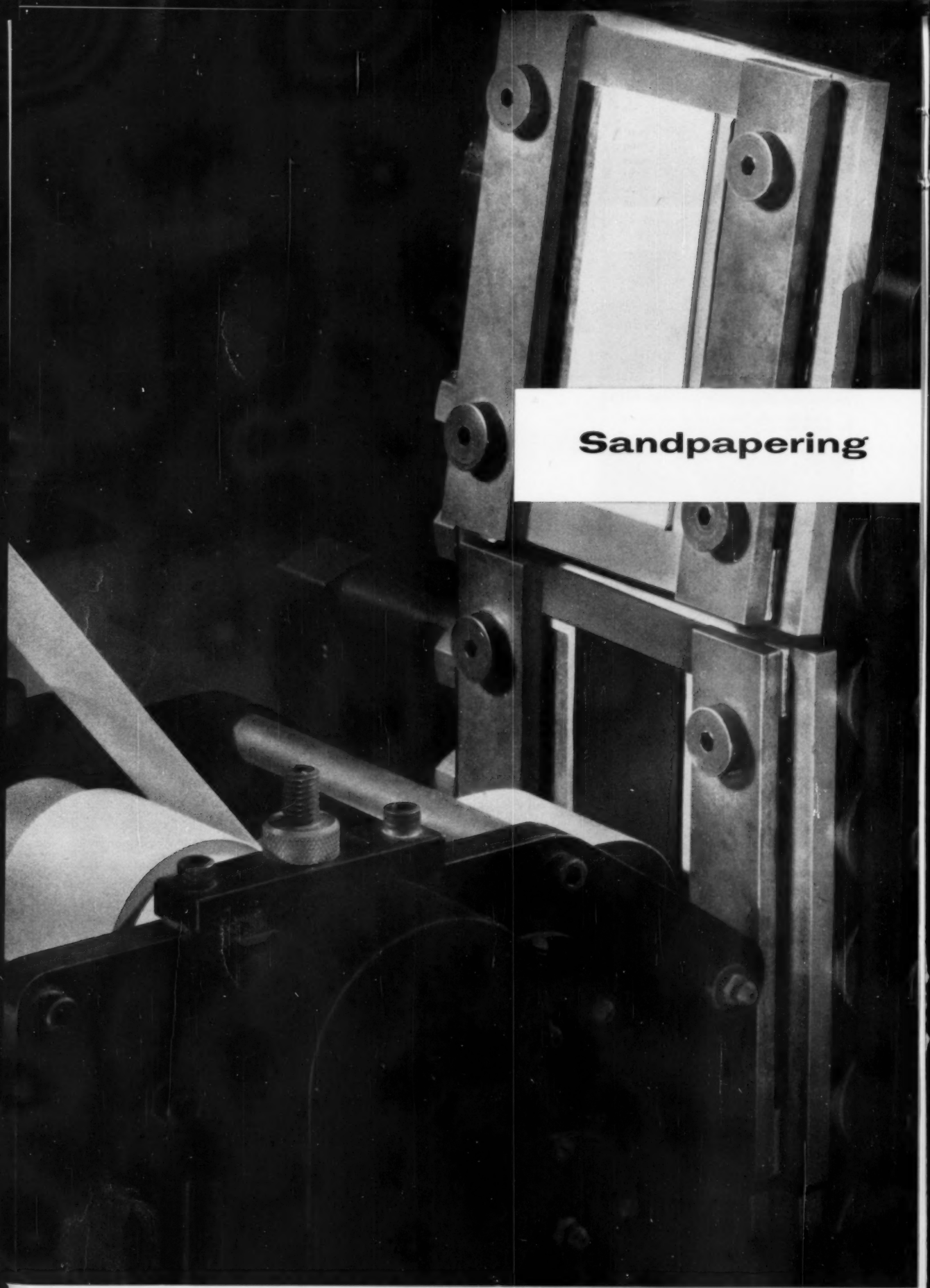
Immediate availability! Yale KG51 Series Gas Trucks—with GS Approval and all the famous Yale engineering features that make Yale trucks the smoothest handling lift trucks ever built—are immediately available in capacities of 3,000 to 10,000 pounds. Send for full facts today about engineering details on Yale Gas Trucks with GS Approval. Write : The Yale & Towne Manufacturing Company, Philadelphia 15, Pa., Dept. 994.

YALE*

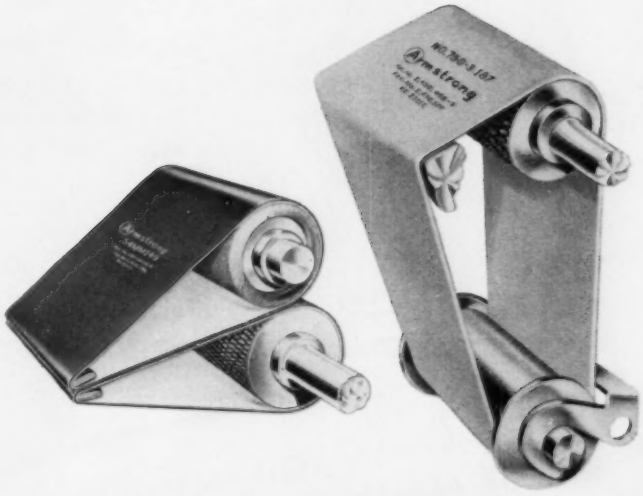
*REG. U. S. PAT. OFF.

INDUSTRIAL LIFT TRUCKS AND HOISTS

Gas, Electric, Diesel, LP-Gas Industrial Lift Trucks • *Worksavers* • Warehousers • Hand Trucks • Hand and Electric Hoists



Sandpapering



Close-up of the business end of the specially designed Armstrong Abrader. Synthetic rubber samples are rotated against a ribbon of fresh sandpaper moving in opposite direction, so combined motion equals 100 inches per minute.

synthetic rubber...to make sure

ACCOTEX APRONS GIVE LONG, DEPENDABLE SPINNING LIFE

Sandpapering rubber is rough treatment, but it's an important research procedure that's used to build greater abrasion resistance into the Accotex® Aprons you use. Today that characteristic is more important than ever because of the heavier weighting used on high-draft frames.

Armstrong research men developed the automatic abrader shown here. On it, samples of as many as six synthetic rubber compounds can be tested by rotating them against a continuously moving ribbon of fresh sandpaper. The samples that lose the least amount of rubber (by volume) obviously have the best abrasion resistance. In just a few hours on this abrader, wear is equal to years of mill service.

The sandpapering test is only one of many exacting steps taken to make sure Accotex Aprons give the best possible performance on modern, long-draft frames. Other advanced research and development methods, plus the latest production techniques, also assure you that these aprons will deliver top-quality yarn.

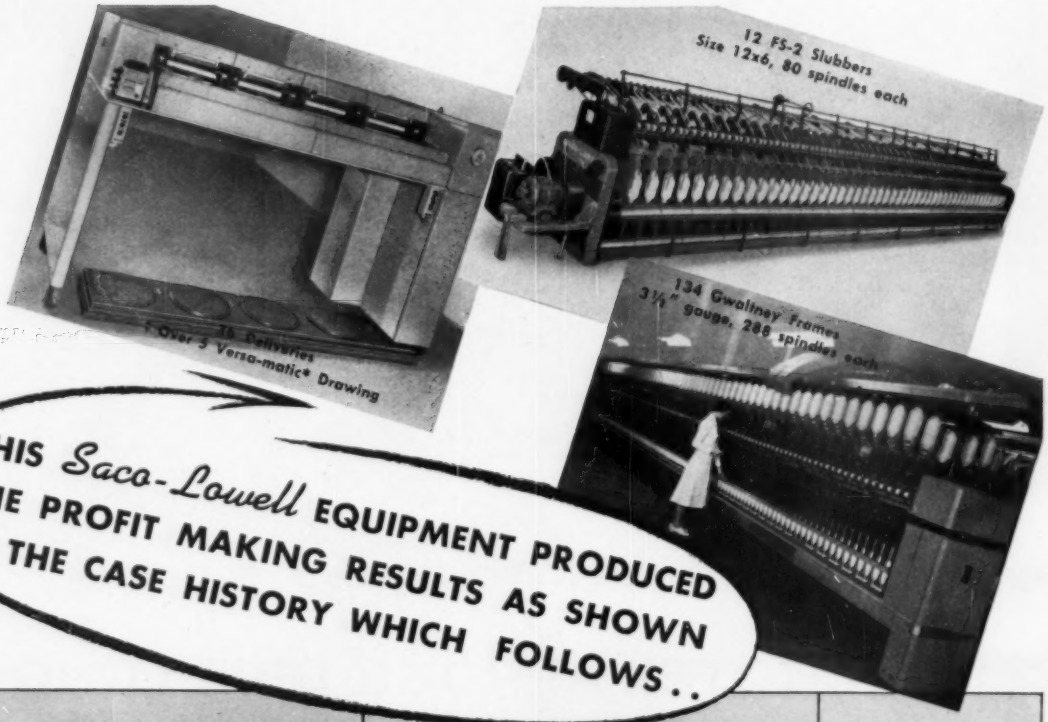
If you're not already using Accotex Aprons, arrange for a test frame next time your Armstrong representative calls. No matter what type of equipment you're using . . . no matter what you're spinning, there's an Accotex Apron specially engineered for your needs.

Write for the booklet, "Armstrong Textile Roll Coverings and Mill Supplies." Armstrong Cork Company, Industrial Div., 6404 Dauphin St., Lancaster, Pennsylvania.

After a run on this automatic abrader, Accotex Apron compounds are carefully weighed. This procedure helps determine their abrasion resistance, or ability to resist the wear frequently caused by higher weightings on today's high-draft frames.

Armstrong ACCOTEX APRONS

. . . used wherever performance counts

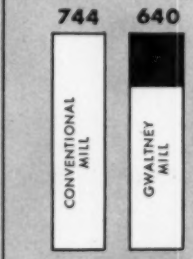


THIS *Saco-Lowell* EQUIPMENT PRODUCED THE PROFIT MAKING RESULTS AS SHOWN IN THE CASE HISTORY WHICH FOLLOWS..

Type of Goods — 39" 80 x 80 4.00-yd. top quality print cloth
No. of Looms — 824
Production per 8-hour Shift — 6120 lbs.
Count of Warp — 31's
Filling — 41's

NO. OF SPINDLES	CONVENTIONAL MILL	SACO-LOWELL GWALTNEY MILL
	40,032	38,592

Man Hours per 8-hour Shift (Opening and picking through Cloth Room)

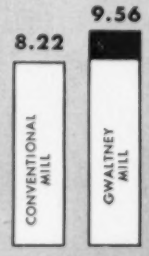


Reduction in Man-hours in Gwaltney Mill
13.98 %

Spinning Spindles per Operative

Increase in Gwaltney Mill
53.06 %

Pounds per Man-hour (Opening and picking through Cloth Room)



Increase in Gwaltney Mill
16.3 %

Proof that AUTOMATION BY *Saco-Lowellizing* IS THE SURE WAY TO INCREASED PROFITS.

Increased production per man hour, higher yield from raw stock and lower production costs can be yours, too, with a Saco-Lowellizing Program. In addition, you will create the improvement in quality so essential in today's competitive market.

Contact your nearest Saco-Lowell Office — one of our Engineers will prepare a "Forecast of Savings" based on Saco-Lowellizing Program for your mill.

*Trademark

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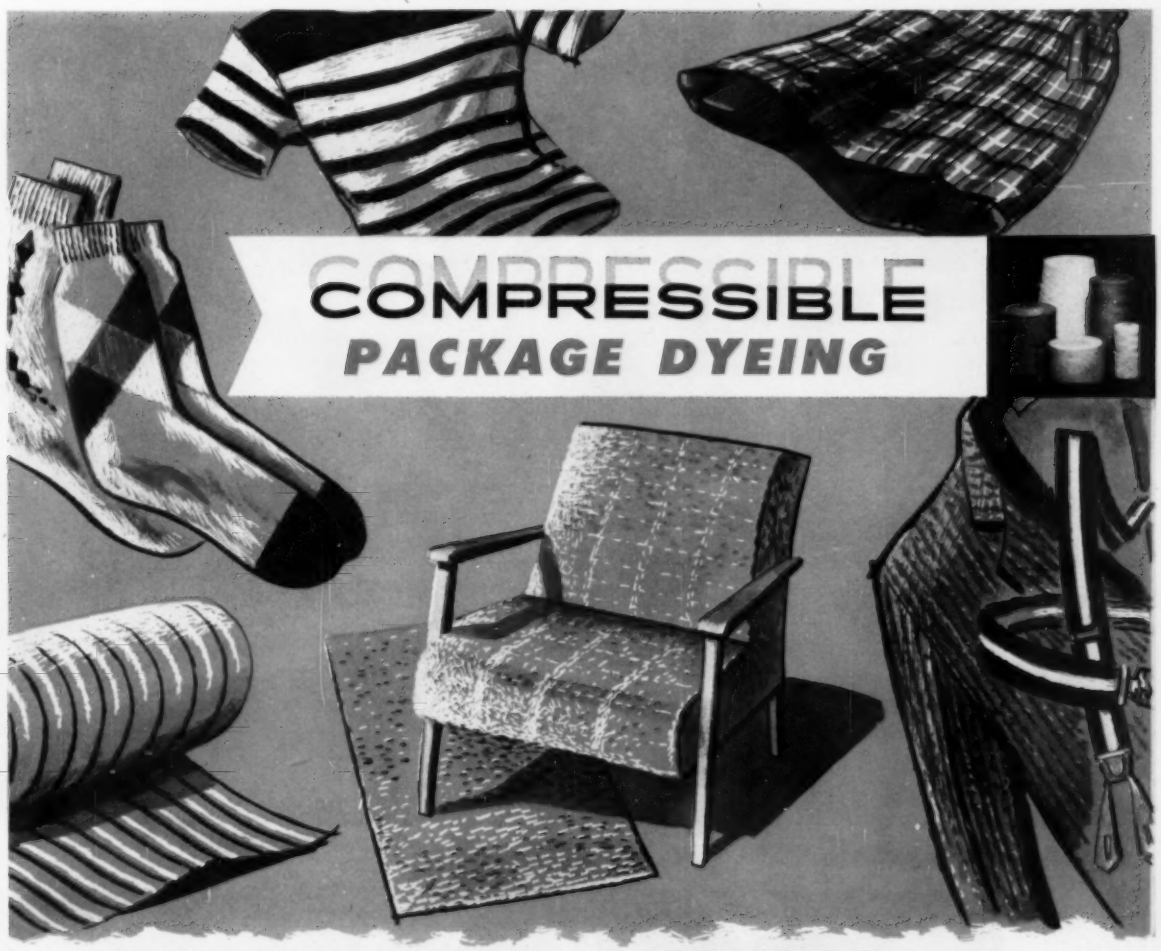
60 BATTERYMARCH STREET, BOSTON 10, MASS.
Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N. C.
SALES OFFICES: CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA

For more information, write direct or use Reader-Service post card.



COMPRESSIBLE PACKAGE DYEING

THE SECRET OF ITS WIDE ADAPTABILITY

1. VARIATION IN DENSITY

When winding dye packages on a commercial basis, density is bound to vary from one package to another.

2. VARIATION IN SHADE

These variations in density will cause variations in shade.

3. EQUALIZED DENSITY

Franklin Process Compressible Package Dyeing is the only package dyeing method whereby density of all packages in a machine can be equalized (see diagram).

4. UNIFORM SHADE

Exceptional uniformity of shade in Franklin Process dye batches is a logical result.

5. DYE BATCHES AS LARGE AS 2500 LBS.

— can be supplied if desired.

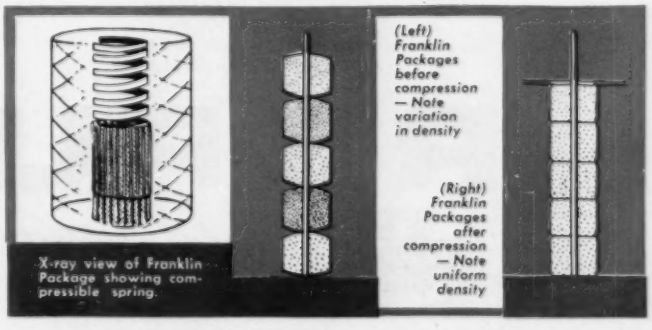
6. USE FRANKLIN PROCESS DYEING

— and get uniform shades.

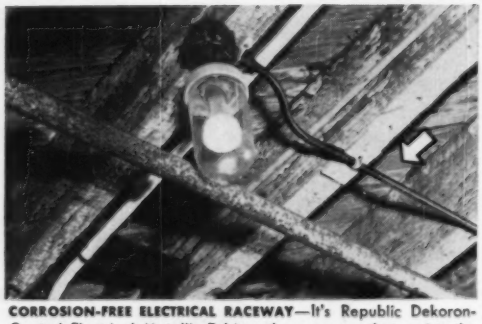
Franklin Process

PROVIDENCE • PHILADELPHIA • GREENVILLE
CHATTANOOGA • FINGERVILLE, S. C.
New York Representative — 40 Worth Street

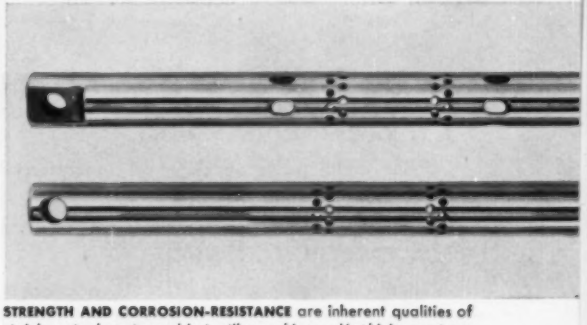
YARN MERCHANTS AND LARGEST PACKAGE DYERS IN THE WORLD — DYEING EXCLUSIVELY ON THE FRANKLIN SPRING


X-ray view of Franklin Package showing compressible spring.
(Left) Franklin Packages before compression — Note variation in density
(Right) Franklin Packages after compression — Note uniform density

 For more information, write direct or use Reader-Service post card.



CORROSION-FREE ELECTRICAL RACEWAY—It's Republic Dekoron-Coated Electrical Metallic Tubing, the raceway that resists the corrosive action of fumes and steam. A polyethylene coating over a galvanized finish provides double protection from outlet to outlet. Moisture-tight joints are made using threadless connectors and couplings. Joints are sealed with vinyl or plastic tape. Dekoron-Coated E.M.T. costs less because it lasts longer.



STRENGTH AND CORROSION-RESISTANCE are inherent qualities of stainless steel parts used in textile machinery. Machining costs on many parts could be expensive.. Manufacturers control them by using Free-Machining ENDURO Stainless Steel Bars. A.I.S.I. 416 and 430-F, are fully 90% as machinable as Bessemer Screw Stock. Apply the high physical properties and corrosion-resistance of ENDURO to your textile machine parts. Republic will help you.

REPUBLIC

REPUBLIC STEEL

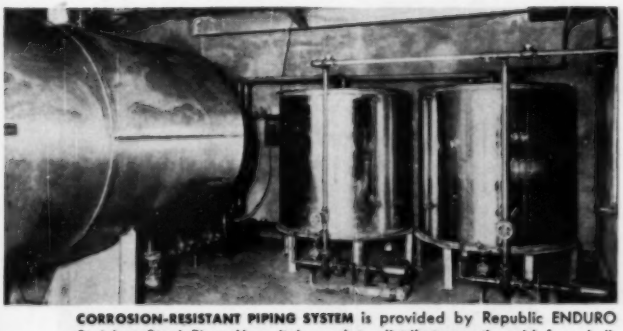
World's Widest Range of Standard Steels

For more information, write direct or use Reader-Service post card.

The metal that provides strength and resists corrosion

ENDURO

Stainless Steel



CORROSION-RESISTANT PIPING SYSTEM is provided by Republic ENDURO Stainless Steel Pipe. Here it is used to distribute acetic acid from bulk storage in a textile mill. ENDURO Stainless Steel Pipe stubbornly resists rust and corrosion. Resists the action of most alkalies and acids. The slight additional cost of this long-lasting pipe is an inexpensive investment in long-range economy. Send coupon for more information.

The 20-foot stainless steel carpet reel, shown at left, easily supports 19 men weighing over 3,000 pounds with only a fraction of an inch deflection.

But of more importance to the textile industry, the reel supports, lifts and winds huge pieces of heavy, wet carpeting 18′ wide and 120′ long, during dyeing operations.

Old-style reels made of other materials could not meet the high strength and corrosion-resistance demanded in today's modern dyeing procedures. Roll engineers of the Rodney Hunt Machine Co., Orange, Mass., solved this problem by utilizing the advantages of ENDURO Stainless Steel in developing the patented Girder Type reel.

The exceptionally high strength-to-weight ratio and corrosion-resistance of stainless steel permits the use of thinner, lighter sections without loss of strength. In the new Rodney Hunt design, internal supports made from solid stainless steel sheet, together with a redesigned central girder have resulted in a reel with 35 times the stiffness of the old type.

Reels made from ENDURO have also solved the problem of contamination and dye carryover caused by other materials of construction. ENDURO Stainless Steel is non-contaminating. It's easily cleaned with a water rinse. It's solid stainless steel all the way through with no applied surface to chip, flake or peel—never any danger of snagging fabrics.

ENDURO-made textile equipment lasts and lasts. While its initial cost may be somewhat higher than less resistant materials, immediate savings in maintenance costs, less down-time for cleaning, and longer service life soon cancel out extra cost and then result in savings.

Your equipment supplier has all the facts on ENDURO Stainless Steel. Or write us for more information.

REPUBLIC STEEL CORPORATION
Dept. C-1535
3190 East 45th Street
Cleveland 27, Ohio

Please send more information on:

☐ ENDURO® Stainless Steel ☐ Dekoron®-Coated E.M.T.
☐ ENDURO Stainless Steel Pipe ☐ Free-Machining ENDURO Bars

Name_____ Title_____

Company_____

Address_____

City_____ Zone____ State_____

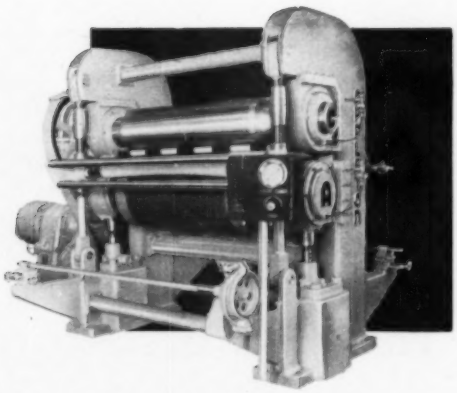
STEEL

and Steel Products

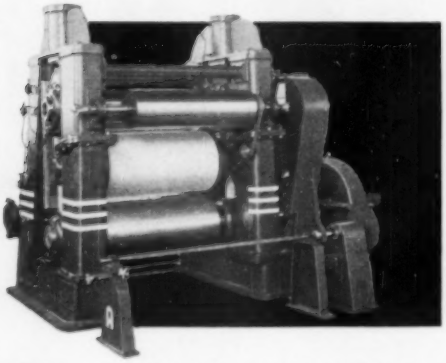
3 efficiency experts

at Everglaze Finishing

Apply increased production and less maintenance to your everglaze operation with new Appleton Machine efficiency . . . that puts you ahead of competition . . . that protects your profits now and for years to come. Here are 3 ways to do it:



1 An Appleton 2-roll, 50-ton Hydraulic Schreiner Calender gives goods a beautiful lustre at 40 yards a minute, 25% faster than most machines in use.



2 The Appleton 3-roll, 50-ton Hydraulic Friction Calender irons the finest everglaze finish at 40 yards a minute, increasing output by 25%.

3 The Appleton 20-ton Embosser imbeds the most meticulous or simplest design with equal ease and efficiency, at the standard 20 yards per minute.

ACCEPTANCE A ASSURED

Acceptance Assured: the invisible stamp of approval on every yard of everglaze finished goods that runs through modern, money-saving Appleton Machines. An Appleton man is as close to you as your telephone. Why not call 3-7361, or wire, collect at absolutely no obligation, today.

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APPLETON MACHINE COMPANY
APPLETON WISCONSIN

CUSTOM-BUILDERS OF TEXTILE CALENDERS · CALENDER ROLLS OF ALL KINDS

Black as the

with all-around fastness, too!

NATIONAL CARBANTHRENE® PRINTING BLACK BBD

DOUBLE PASTE

Now you can print deep blacks that resist rubbing *and* have a host of other desirable fastness properties, too.

National Carbanthrene Printing Black BBD Double Paste produces jet black shades on cotton or rayon. These shades have very good fastness to rubbing, maximum light fastness and very-good-to-excellent fastness to wet processing. It is highly recommended for prints that must combine exceptional resistance to light laundering *and* crocking.

National Carbanthrene Printing Black BBD Double Paste is an anthraquinone vat with an exceptional combination of properties, as the ratings in our shade card (Bulletin #433) will confirm. So, for the next run that calls for "a jet black that doesn't crock", try National Carbanthrene Printing Black BBD Double Paste!

NATIONAL®

vat dyes

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It's a fact... Backed by new, conveniently located headquarters at Gaffney, S. C., National-Sterling Sales Engineers are now equipped better than ever to serve the Southern Textile Industry.

Replacing our former headquarters at Charlotte, this new Office and Warehouse provides improved facilities for receiving, storing and shipping the complete line of National-Sterling Ring Travelers in all weights, sizes and styles. Combined with the technical knowledge of our Sales Engineers and their proven ability to select the right traveler for every need, this central source of supply will enable us to meet your exact requirements quickly and completely—whatever fibres you are running.

Wherever your plant is located — in the South or North — always ask for National-Sterling when you order ring travelers. Write, wire or phone for prompt service.

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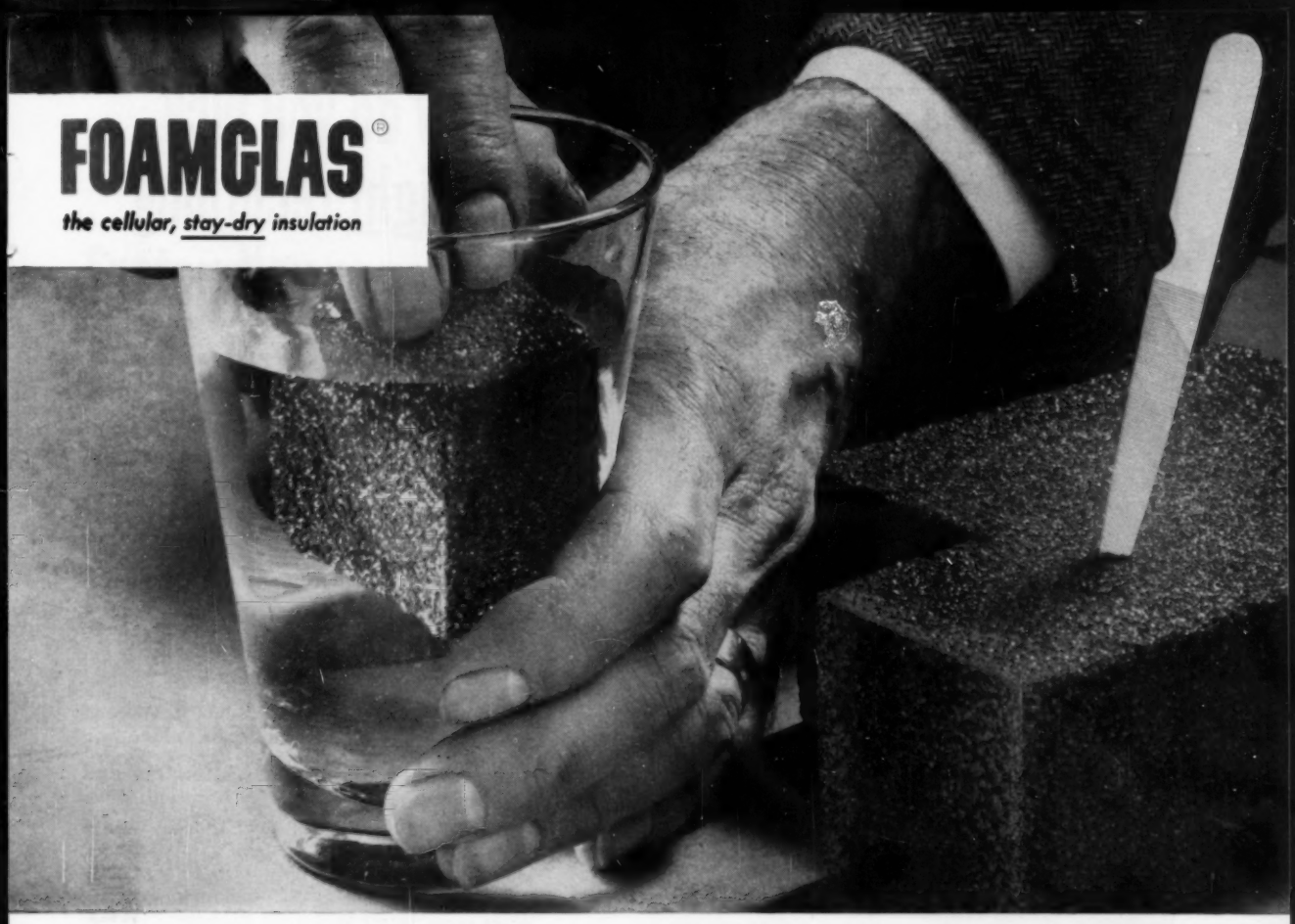
NATIONAL RING TRAVELER CO. PAWT. R.I. U.S.A.

FOR SPINNING AND TWISTING ALL NATURAL AND SYNTHETIC FIBRES

FOAMGLAS®

the cellular, stay-dry insulation



STAYS DRY—Cut a piece from your sample. Place it in water. Note how the hermetically-sealed glass cells filled with dead air keep it afloat. Weight it down for days, weeks or longer if you like. Remove the weight and it bobs back to the surface . . . proof that the sealed cells have absorbed no water, still have their original insulating efficiency.

Send for a sample and make these simple tests!

Prove to yourself that FOAMGLAS is your ideal insulation!

Let us send you a free sample of FOAMGLAS. Use it to make the few simple tests illustrated. You'll prove that this unique cellular glass insulation has exactly the right combination of properties to assure you of these vital benefits: constant insulating efficiency . . . long, maintenance-free life . . . strength and rigidity for a variety of structural applications . . . and ease of handling and installation.

Thousands of users have proved in actual performance the benefits so clearly demonstrated by these tests. No wonder, then, that new users every day are picking FOAMGLAS to insulate the roofs, ceilings, walls and floors of all types of buildings, low temperature spaces, piping and equipment. Send for a sample today and make your own tests. Please write . . .

Pittsburgh Corning Corporation
Dept. AH-46, One Gateway Center
Pittsburgh 22, Pa.
In Canada: 57 Bloor St. W., Toronto, Ontario

VAPOR-PROOF—With a nail file, cut a ¼" thick slice from your sample. Hold it to your lips and try to blow smoke through it. The smoke won't penetrate . . . proof that FOAMGLAS is a positive vapor barrier in itself.

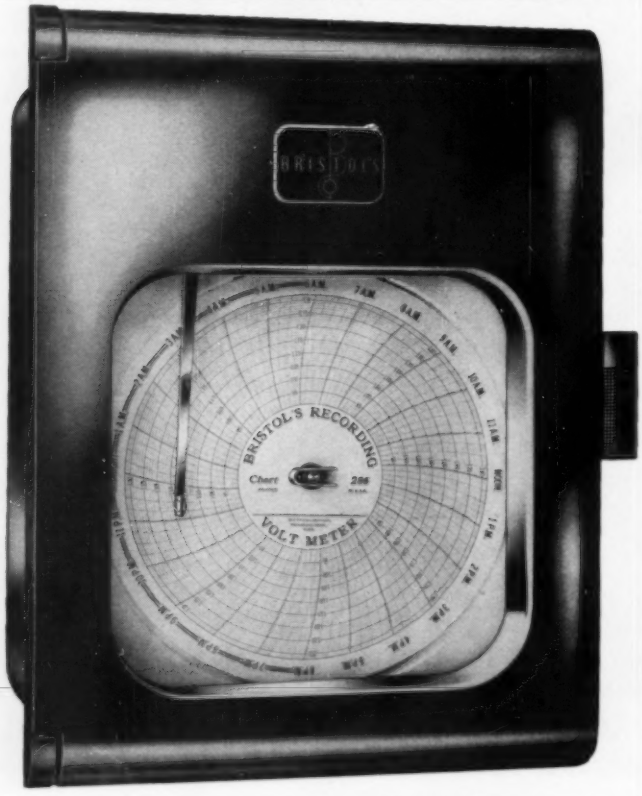
STRONG AND RIGID—Place your FOAMGLAS block on the floor. Stand on it. Note how it supports your weight without crushing. Compressive strength is over seven tons per square foot . . . making it ideal for load bearing applications.

INORGANIC AND FIREPROOF—Hold a flame to your sample. You'll see at once that it does not burn . . . a major safety feature in all construction. It's even acid-proof and rodent-proof as you can prove if you happen to have a vial of acid or a pet rat handy.

LIGHT WEIGHT—Just pick up your sample to see how light and easy to handle it is. Check actual weight on your company's postal scale if you wish. The density of FOAMGLAS is only 9 pounds per cubic foot.

EASY TO SHAPE AND CUT—Shave some strips off your sample with an ordinary paper clip . . . workmen use knives, saws or trowels for quick shaping and fitting on the job.

WHAT'S NEWS AT BRISTOL . . .



PERMANENTLY MOUNTED Bristol Voltmeters and Ammeters come in three models: interchangeable surface and flush, surface-panel, and flush panel.

How do you pick the right recording ammeter or voltmeter?

The *right* choice for any voltage or current measurement and recording job is a Bristol Series 500 instrument.

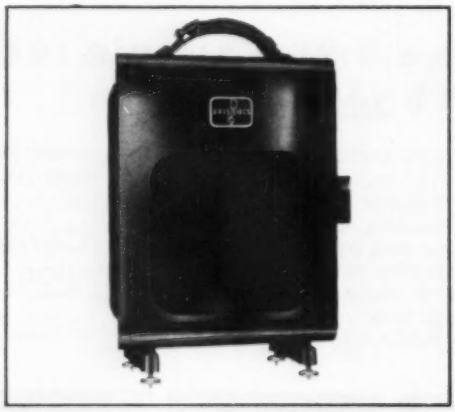
Why Bristol? Mainly because for sheer accuracy the Bristol Recorders can't be topped. Among the reasons for that are:

1. Low burden – the lowest burden of any round-chart recorder on the market.
2. Extremely high torque gradient.
3. Temperature compensated.
4. Shock-proof moving element mounting.
5. Leveling of instrument not critical.
6. Continuously legible recording of sudden changes – up to full scale value.

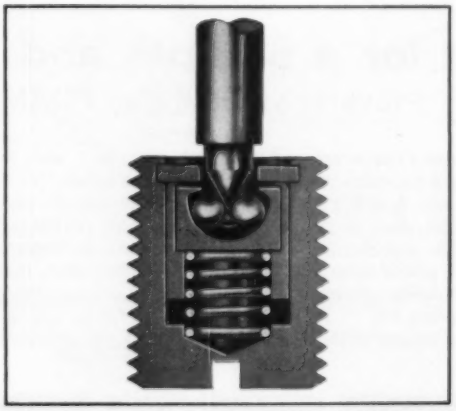
Also, Bristol's Series 500 Voltmeters and Ammeters are designed for easy use, with dust- and moisture-proof cases; quick-set chart hub for each chart changing; and snap-on chart plate.

Models offered that comply with ASA Specification C39.2.

Want more facts? Write for Bulletin E1111 to the Bristol Company, 103 Bristol Road, Waterbury 20, Conn. 5.19



SINGLE AND TWO-PEN PORTABLE BRISTOL RECORDERS are offered in two models: one chiefly for portable pole mounting and the other for general portable service.



NEW BALL-BEARING SUSPENSION, loaded by a coil spring, prevents damage even under severe mechanical shock. Corrosion-resistant stainless steel ball bearings are almost tool-hard.

BRISTOL

TRADE MARK BRISTOL'S REG U.S. PAT. OFFICE

POINTS THE WAY IN HUMAN-ENGINEERED INSTRUMENTATION

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

For more information, write direct or use Reader-Service post card.

with exclusive Plastavon Sleeves!

When you use SONOCO Dytex Tubes, with Plastavon Sleeves, you employ a product backed by laboratory and in-use development proven by over 20 years' experience.

SONOCO Dytex Tubes are accepted by the industry for all standard forms of package dyeing. The exclusive Plastavon Sleeve allows more even dye distribution, better "flow" control and filters out objectionable or discoloring matter. Also reduces slippage in primary winding.

Standard sizes: ⅜" I.D. x 6¾" long and 1⅜" I.D. in varying lengths. Special sizes available. Can be furnished in certain colors for identification. Consult your Sonoco sales-engineer or write us direct.

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SONOCO PRODUCTS COMPANY

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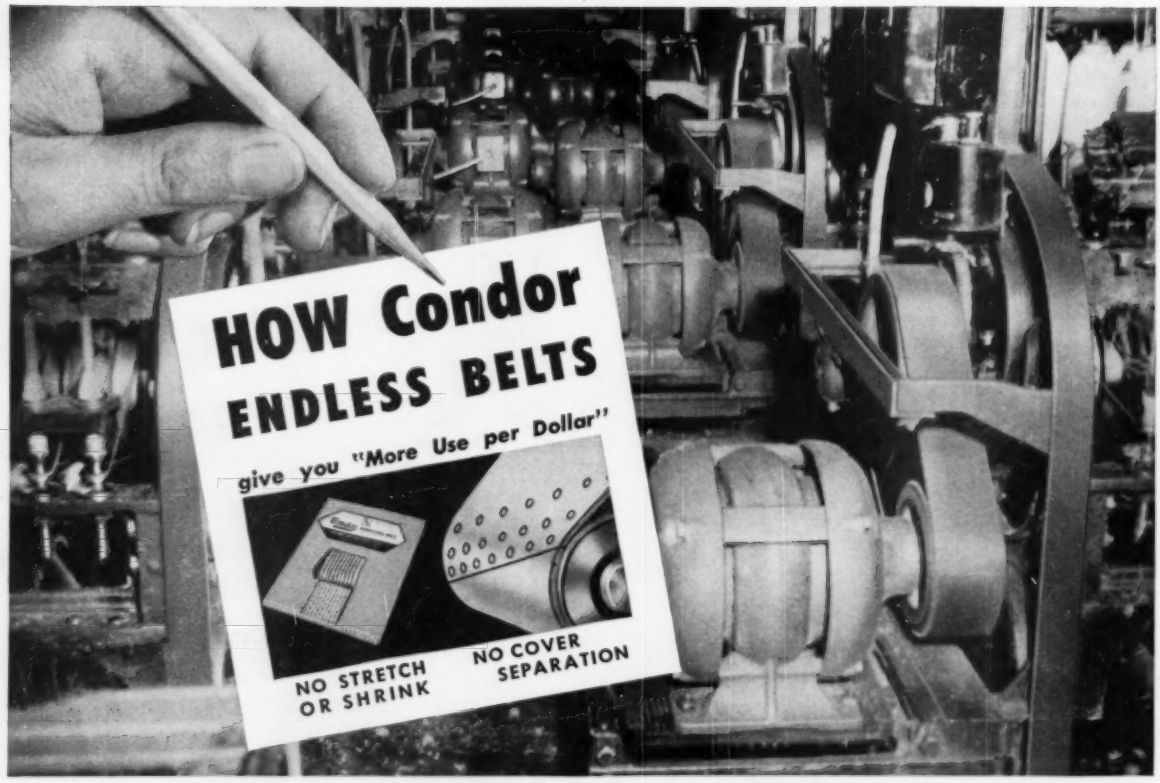
DEPENDABLE SOURCE OF SUPPLY



Condor Whipcord Endless Belts Boost Production

Steady, unfailing power delivery with high overload capacity, long life, and freedom from stretch or shrinkage result in greater efficiency at lower cost for machines equipped with Condor Whipcord Endless Belts. These all-purpose belts offer exceptional advantages for hard wearing installations—on drives with short centers, small take-up, small pulleys, reverse bends, high speeds and heavy loads at high tensions. Extremely flexible, they are ideal belts for machines where serpentine drives supply power for several operations. Condor Whipcord Belts feature an endless-wound, sealed-in cord construction which is de-stretched during manufacture. They will not shrink on the drive and are virtually unaffected by atmospheric changes. On many drives they have outlasted 3 to 10 ordinary belts.

EXTENSIBLE-TIP COVER SPLICE

R/M's exclusive Extensible-Tip cover-end splice "elasticizes" the splice area with a series of rubber rivets to dissipate stress when rounding pulleys. This eliminates cover separation . . . adds further to the longer service life of Condor Whipcord Belts.

CONDOR COMPENSATED BELT

On closed drives where belt fasteners are required, Condor Compensated Belt eliminates fastener trouble. A patented Manhattan process equalizes belt ply stresses when rounding pulleys. *Every* ply is under uniform tension and *every* ply pulls its full share of the load to eliminate ply rupture and separation—especially at the fasteners. Condor Compensated Belt holds fasteners up to 4 times longer than ordinary belt!

SELECTION OF DRIVING SURFACES

Both Condor Whipcord Endless Belts and Condor Compensated Belt are available in a selection of four driving surfaces to meet various machine tension requirements. Let an R/M representative show you how to boost production . . . get "More Use per Dollar" . . . with Condor Endless Belts and Condor Compensated Belt at your mill.

RM 604T

MANHATTAN RUBBER DIVISION—PASSAIC, NEW JERSEY

RAYBESTOS-MANHATTAN, INC.

Other R/M products include: Industrial Rubber • Fan Belts • Radiator Hose • Brake Linings • Brake Blocks • Clutch Facings
Asbestos Textiles • Packings • Engineered Plastic, and Sintered Metal Products • Laundry Pads and Covers • Bowling Balls

For more information, write direct or use Reader-Service post card.

"Sludge and rust are things of the past with GULFSPIN OIL on the job,"

*says this prominent southern mill.**

The Technical Assistant to the General Manager of this prominent Southern mill and Gulf Sales Engineer C. T. Timmons watch spindles lubricated with Gulfspin spin clean and free.

"Sludge, rust, and sticking spindles ceased to be a problem when we switched to Gulfspin three years ago," report mill personnel.

Many other leading textile mills have discovered that Gulfspin contributes to smoother operation, rock-bottom maintenance and power costs. Then too they appreciate the fact that spindle bases don't have to be cleaned so often.

Gulfspin works three ways to keep spindles clean and insure smoother spindle operation: First, it's oxidation stabilized to resist sludge formation. Second, it prevents contaminants from depositing in spindle bases, a major cause of spindle vibration. Third, it provides effective protection against rust—reduces bolster wear.

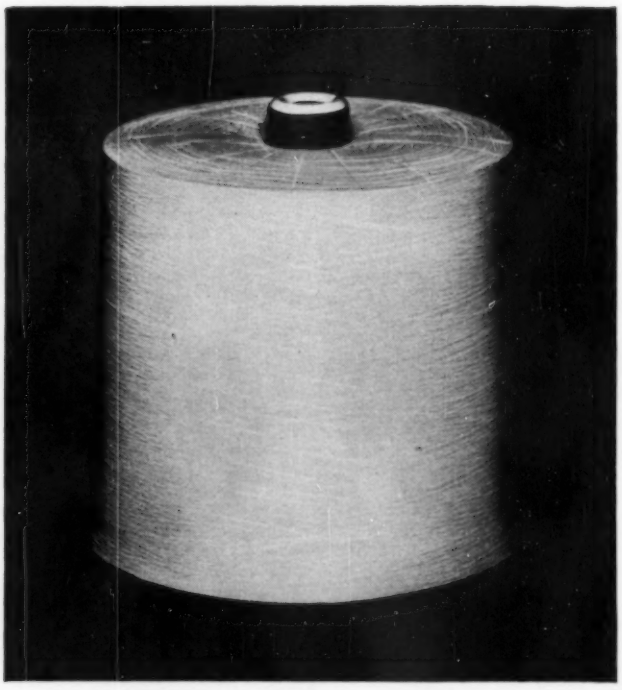
Contact a Gulf Sales Engineer and let him demonstrate Gulfspin's superiority on your frames. You'll find the number of your local Gulf office in the telephone directory.

**Name furnished upon request.*

Gulf Oil Corporation · Gulf Refining Company
1822 Gulf Building, Pittsburgh 30, Pa.

GULF

THE FINEST PETROLEUM PRODUCTS FOR ALL YOUR NEEDS



new package
cuts creeling costs
up to 26%...
improves quality

CELANESE* ACETATE YARN NOW AVAILABLE ON 6-LB. CONES

Celanese has developed a new 6-lb. acetate yarn cone which offers weavers and knitters definite advantages in both cost and quality. These are:

1. Reduction in labor costs in quilling, warping and knitting because of longer runs. Savings run up to 26% in warping, 15%-20% in backwinding and redrawing, 3.5% in quilling.
2. Extremely low average knot count per pound of yarn (average of slightly over *one knot per cone!*).
3. Fewer knots in beams due both to less frequent transfer and to fewer breaks—particularly important in heavier deniers where large knots pick up dirt passing through tensions, drop wires, heddles, etc.
4. More uniform tension throughout the cone as a result of the large supply package used in coning.

For further information, write Celanese Corporation of America, Textile Division, Charlotte, North Carolina.

*Reg. U.S. Pat. Off.

Celanese CORPORATION OF AMERICA, NEW YORK 16, N. Y.

For more information, write direct or use Reader-Service post card.

New Balanced Mobil D.T.E. Oils—

Socony Mobil D.T.E. Oils have long set the standard for performance of hydraulic and circulating oils. Today, after many years of continuing laboratory research and several years of exhaustive field tests, we announce a completely new line of Mobil D.T.E. Oils. These are balanced to give much greater resistance to deposits, longer life even at high temperatures, superior wear protection and rust prevention.

These new oils will meet the over-all requirements of your hydraulic and circulating systems *better than any other product.*

★ ★ ★

For further information on how new D.T.E. Oils can improve your production and cut costs, fill out the form below.

SOCONY MOBIL
CORRECT LUBRICATION

First Step in Cutting Costs

SOCONY MOBIL OIL COMPANY, INC., and Affiliates:
MAGNOLIA PETROLEUM COMPANY, GENERAL PETROLEUM CORPORATION

* I would like to know more about your new balanced D.T.E. Oils

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Company_____
Street_____ Zone____ State____
City_____

SEND TO: Socony Mobil Oil Company, Inc.
Room 1316, 26 Broadway
New York 4, New York

Size fluidity is always right... from cooking to application with

EAGLE® Thin-Boiling Starches

Higher production rates of modern slashers make the uniform fluidity of Eagle Starches vitally important.

From size kettle to application the viscosity and strength of Eagle brand starches is uniform, assuring you top weave room performance.

Despite continued heating, agitation and pumping, these acid-modified, thin-boiling starches consistently give the precise size fluidity you need in a modern slashing operation.

Eagle brand starches produce a uniform size mixture that penetrates the yarn evenly. Where you want more weight of size, or a thicker size film, try Eagle brand starches. They maintain their viscosity and give you a maximum of size concentration. Available in a full range of fluidities, try Eagle brand starches.

Ask the man from Corn Products. Ready to assist you in any way, he has at his disposal the most complete laboratory and technical facilities in the industry. The man from Corn Products can also provide engineering service for the installation of bulk-handling equipment. Write or phone for information, there is no obligation.

1906 • **50th ANNIVERSARY** • 1956
CORN PRODUCTS REFINING COMPANY
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Corn Products makes these famous starches for the textile industry—
Eagle • Foxhead • Globe • Hercules • Ten-O-Film • Globe Dextrines & Gums

You Can't Beat Horse Sense

MR. JAMES F. MALCOLM, President, Revonah Spinning Mills

"The future belongs to those who prepare for it. That's plain horse sense."

There you have the down-to-earth philosophy of Mr. James F. Malcolm, President of Revonah Spinning Mills of Hanover, Pa.

That philosophy, backed by the courage to invest in the future, has led Revonah to a position of prominence in the business of spinning yarns for the weaving and tufted industries.

The Industrial Rayon Corporation is indeed proud of Mr. Malcolm's comments on The New Nylon Staple:

"The bulk of our nylon yarn business is blends and we find that The New Nylon Staple contributes greatly to our spinning efficiency. We have used The New Nylon for a year and have found it highly satisfactory!"

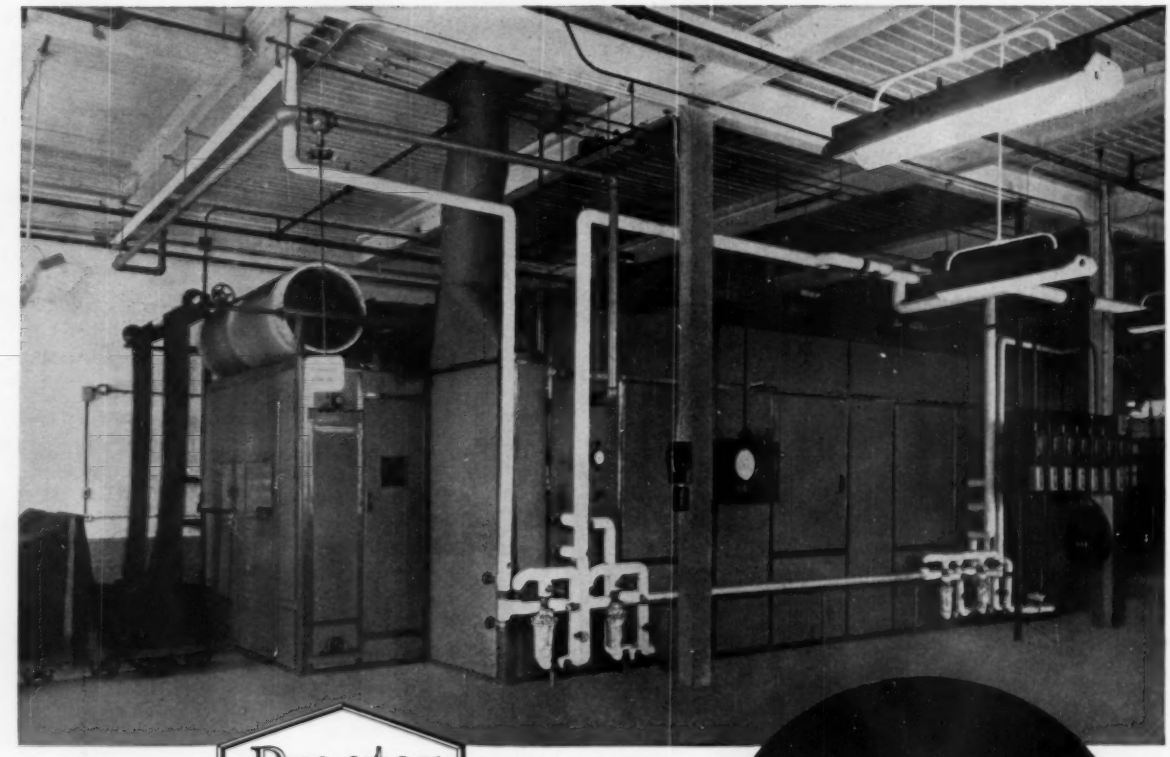
THE NEW Nylon Staple

I·R·C *Industrial Rayon Corporation*

Sales Offices: 500 Fifth Avenue, New York 36, N. Y.
627 Guilford Bldg., Greensboro, N.C.

For more information, write direct or use Reader-Service post card.

CURE TEXTILE FABRICS AT A PROFIT!



Installation view of Proctor Loop Curer

THE Proctor

LOOP CURER and ROLLER CURER

These rugged, high-capacity machines feature the latest design and construction improvements—all geared to increase your profits. Units can be combined with existing equipment to meet your exact requirements. For fabrics that will not handle properly in loop, the roller curer is recommended. Recent developments for this machine also include improved air distribution, flexibility in holding capacity, and no-stretch operation. These machines are the result of long experience in supplying machinery to the textile industry. For the complete story of the profit-making opportunities offered by Proctor, write today for latest information bulletins.

- GREATEST CURING UNIFORMITY
- IMPROVED DESIGN
- MAXIMUM CAPACITY WITH MINIMUM POWER REQUIREMENTS
- FLEXIBILITY OF OPERATION
- SIMPLIFIED INSTALLATION

PROCTOR & SCHWARTZ EQUIPMENT FOR THE TEXTILE FIELD

AUTOMATIC BLENDING SYSTEMS • WEIGHING FEEDS • PICKERS • SHREDDERS • BALE BREAKERS • SYNTHETIC CARDS • GARNETTS • DRYERS FOR FIBROUS MATERIAL • YARN DRYERS • HOT AIR SLASHER DRYERS • CLOTH CARBONIZERS • ROLLER DRYERS AND CURERS • LOOP AGERS FOR PRINT GOODS • TENTER HOUSINGS • OPEN-WIDTH BLEACH SYSTEMS FOR WOVEN FABRICS • MULTIPASS AIRLAY DRYERS • NYLON SETTING EQUIPMENT • CON-O-MATIC WASHERS • CONTINUOUS BLEACH SYSTEMS FOR PRODUCING TUBULAR KNITS • EQUIPMENT FOR "REDMANIZED" ® SHRUNK-TO-FIT FABRICS • CARPET DRYERS

Proctor

PROCTOR & SCHWARTZ, INC. Philadelphia 20, Pa. Manufacturers of Textile Machinery & Industrial Drying Equipment.

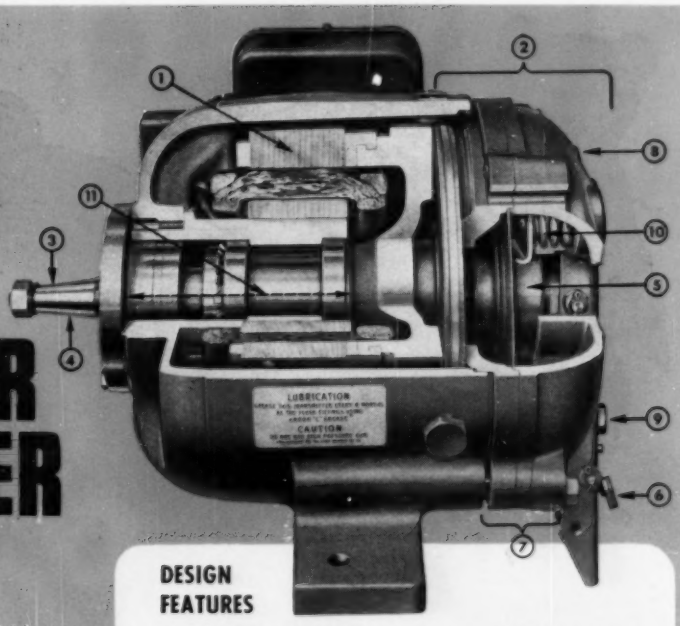
for more information, write direct or use Reader-Service post card.

Here it is!

THE NEW DIEHL "BA" POWER TRANSMITTER

For Draper Looms

Exclusive new design features mean . . . *consistent* quality production . . . *peak* operating efficiency . . . minimum maintenance, labor and costs!

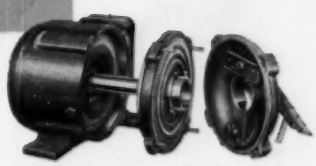


DESIGN FEATURES

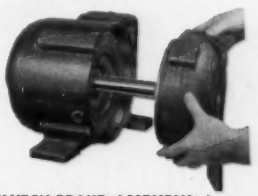
*1. High inertia inverted motor provides "stored energy" for smooth, fast starts and positive picking (maximum inertia with minimum size) . . . prevents regeneration.

STREAMLINED FRAME
Easy to clean. Roomy terminal box.

KINETIC BRAKING ACTION
(See Feature 6)



CLUTCH-ACTUATING BEARING—A strikingly new and improved method of mounting. (See Feature 5)



CLUTCH-BRAKE ASSEMBLY—Improved, simplified. Readily removable as a unit. (See Feature 2)

plus these outstanding New Features

*2. **CLUTCH-BRAKE ASSEMBLY**—Improved and simplified for positive action and ease of adjustment. Removes readily as unit for maintenance, without disconnecting motor from loom frame.

3. **PINION**—Free accessibility for installation and maintenance.

4. **SHAFT**—Large diameter, alloy steel, heat treated—assures long life, eliminates need for outboard bearing.

*5. **CLUTCH-ACTUATING BEARING**—New diaphragm mounting for frictionless clutch action, positive radial rigidity of bearing . . . eliminates fretting corrosion . . . means full self-alignment of bearing for maximum life.

*6. **KINETIC BRAKING ACTION**—For rapid, accurate stops. Particularly desirable for center fork detection looms.

7. **CLUTCH AND BRAKE ADJUSTMENT**—Simple and convenient. Provides visible check on brake alignment.

*8. **CLUTCH-SETTING INDICATOR**—Built integral with unit for instantaneous external checking of clutch setting.

9. **SAFETY LATCH**—Built integral with unit. Prevents accidental engagement of clutch.

10. **CLUTCH-LOADING ASSEMBLY**—Internally located, hence tamper-proof.

11. **SHAFT-END BEARINGS**—Arrangement simplified and improved. Two ball bearings and an extra large roller bearing assure maximum life.

** Exclusive feature—patent protected.*

The original and only loom power transmitter . . . plus many new and outstanding design and construction features never before incorporated in a loom drive!

Over 40,000 Diehl Power Transmitters have been in continuous operation on DRAPER LOOMS—*most of them more than six years!* The new "BA" Power Transmitter is even *more* compact, more streamlined, *more* efficient and *more* easily installed and serviced than its famous predecessor.

It's an inverted-type high inertia motor combined with a fast, positive clutch-brake mechanism. Note the exclusive new design features—the clutch-actuating bearing mounting . . . the kinetic braking action . . . the unitized clutch-brake assembly. These important advancements mean increased production . . . improved cloth quality . . . lowered operating costs . . . fewer shutdowns. *Write, wire or phone today for full information.*

Diehl

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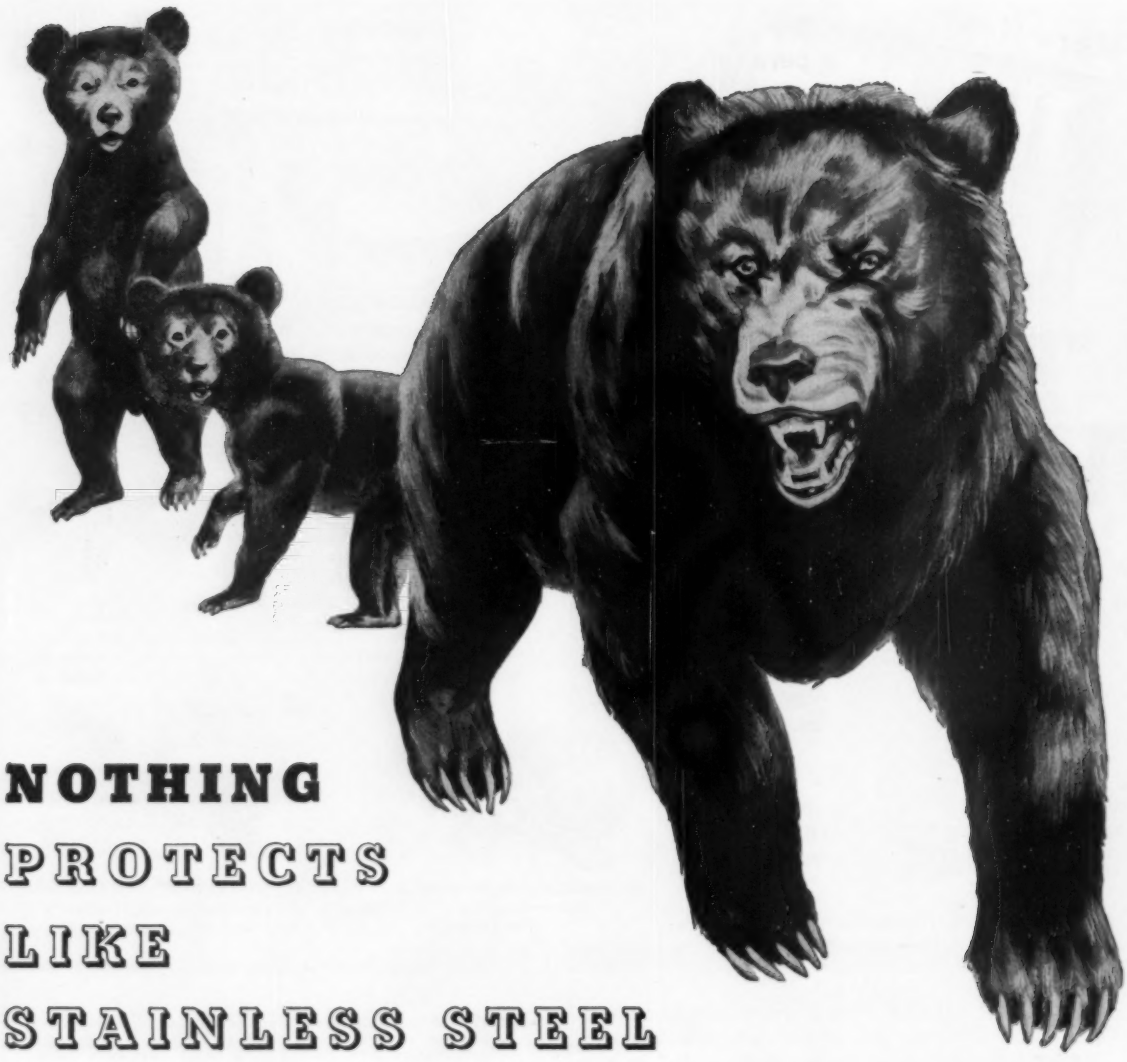
Electrical Division of THE SINGER MANUFACTURING COMPANY

Finderne Plant, SOMERVILLE, NEW JERSEY

ATLANTA • BALTIMORE • CHARLOTTE, N. C. • CHICAGO • CINCINNATI • DETROIT • MILWAUKEE • NEEDHAM, MASS. • NEW YORK • PHILADELPHIA • PITTSBURGH



NOTHING PROTECTS LIKE STAINLESS STEEL

Write for your Copy:
AL STAINLESS STEEL Report to the Textile Industry

40 pages of useful information on the applications and advantages of stainless steel in textile plant equipment of all types. Well illustrated—also contains a technical section of data on selection and fabrication, etc.

ADDRESS DEPT. TW-76

In the world of products and equipment, just as in Nature, *protection* is the difference between a long life and a too-early end.

Many materials are good-looking. Some are strong. Some resist corrosion. But not one other commercially-available material offers the same combination of beauty, high strength, high hardness and resistance to corrosion, heat and wear that stainless steel can give you. Not one has the ability to protect as completely, last as long and cost you as little in the long run.

These qualities in AL Stainless Steel can boost the salespower of a product, or cut the operating costs of equipment—often with little or no increase in first cost. Very likely *you* have problems where these advantages can bring you benefits. Let us work with you. ***Allegheny Ludlum Steel Corporation, Oliver Bldg., Pittsburgh 22, Pennsylvania.***

W&D-5438C

For Stainless Steel in ALL Forms—call

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AL® STAINLESS STEEL

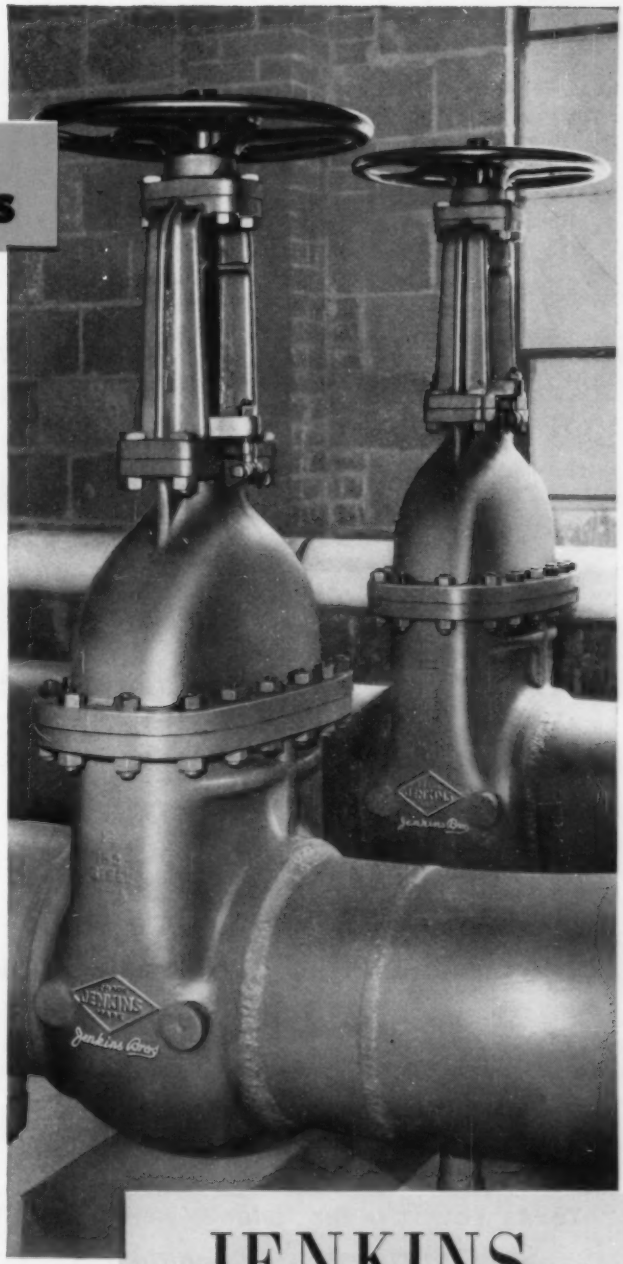
Warehouse stocks carried by all Ryerson Steel plants

For more information, write direct or use Reader-Service post card.

For higher pressures
—higher temperatures

JENKINS CAST STEEL VALVES

serve the systems planned for lowest operating costs



The steadily increasing number of power generation and industrial processing installations of Jenkins Cast Steel Valves is clear evidence of economy-minded selection by valve specifiers and buyers.

Jenkins Cast Steel Valves offer any required combination of casting alloys and seating metals for any service up to 600 lbs. pressure and 1000°F. temperature. Along with specified ratings, buyers get the plus of Jenkins *extra value*, in design, in construction, in quality standards.

Test Jenkins Cast Steel Valves at the most punishing control points in your plant. Compare performance, and you'll see how they set new standards for long-range economy.

PATTERNS

Gates 2" to 24". Globes and Angles 2" to 10". Swing Checks 2" to 12". Non-return, stop and check Globes and Angles 4" to 10".
Screwed, Flanged, or Weld Ends.

PRESSURES

150 lb. — 300 lb. — 400 lb. — 600 lb.

PRESSURE CASTING ALLOYS

Carbon Steel (150 lb.)
Carbon Molybdenum Steel — 300, 400, 600 lb. Valves
Chromium Molybdenum Steel

SEATING METALS

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13% Chromium Stainless Steel
Carbon Molybdenum Steel, Stellite faced
AISI Type 316 Stainless Steel

JENKINS
LOOK FOR THE JENKINS DIAMOND
VALVES
SINCE 1864 TRADE JENKINS MARK
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FOR COMPLETE SPECIFICATIONS, GET THIS CAST STEEL VALVE CATALOG

It describes all patterns, casting alloys, and seating combinations, with details of the *extra value* design and construction features. Gives pressure-temperature ratings, dimensions, and other technical data. Get a copy from your Jenkins Valve Distributor, or write: Jenkins Bros., 100 Park Ave., New York 17.

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Texas Tower radar "Island" keeps cool with AIRTEMP Air Conditioning

Under a blazing summer sun, this offshore air defense Texas Tower radar "island" could literally *cook* the Air Force crews that man it. But not with Airtemp air conditioning on the job!

Cool, clean, healthful air, provided by packaged chiller units, helps keep radar crews alert...helps precision radar stay accurate. Thus, men and equipment alike perform efficiently in this vital link of our early warning network.

It's unusual air conditioning to be sure, but just a routine application for top engineers of Airtemp Construction Corporation. As air conditioning specialists, these men provide efficient systems for buildings, offices and stores of every kind.

Their experience, plus years-ahead engineering by Chrysler, assures dependable, trouble-free air conditioning through the years.

When *you* specify Airtemp, you help clients cut operating costs, attract new business, increase profit dollars. Let your Airtemp distributor give you the facts. Or, write: *Airtemp Construction Corp., Dept. TW-4-56, Dayton 1, Ohio.*

Airtemp
CONSTRUCTION CORPORATION
SUBSIDIARY OF CHRYSLER CORP.

AIRTEMP BUILDS AIR CONDITIONING TO MEET EVERY REQUIREMENT

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HERE'S HOW
to solve finishing problems

problems of padding:

uneven extraction . . . high liquor retention . . . shading . . . uneven pressures . . . poor penetration . . . resin mark-off . . . low abrasion resistance; these and other problems are greatly reduced by the Rodney Hunt Niptrol® Mangle which provides uniform nip across the full roll width. Send for complete information, contained in Bulletin 54.

problems of washing:

tension . . . low speed . . . high maintenance cost . . . poor washing; Rodney Hunt's Tensitrol® washers provide efficient, fast washing of most fabric weights and contribute to the hand and appearance of the finished goods. Catalog 849 has full information on Tensitrol Open Width and Rope Washers.

problems of bleaching:

costly kier system . . . rope marks . . . high chemical loss . . . spotty bleaching; bleaching ranges are made by Rodney Hunt for both Becco and DuPont systems. Bleaching Rangettes®, for capacities from 250 to 1500 pounds per hour, full-size ranges for the largest mills, or combinations of both; all are described in Catalog 103. Ask for your free copy.

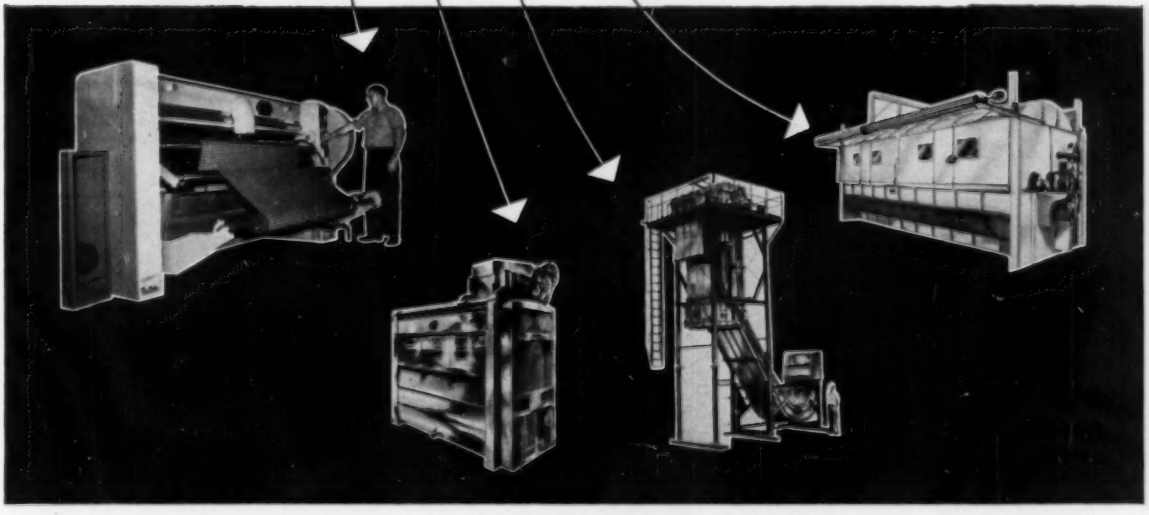
problems of dyeing:

chafe marks . . . shading . . . excessive dye consumption . . . tension . . . uneven dye distribution; these troubles are solved with Tru-Shade® Dye Becks which give efficient, uniform dyeing and quick change-over from shade to shade. Write now for details of the Rodney Hunt Tru-Shade design.

Other Rodney Hunt Finishing Equipment

includes Pad Steam Dye Ranges, Desize Ranges, Wringmaster® Squeezers, Padders, the Barotor, Slack Loop Washers, Scutchers, Rolls and Reels.

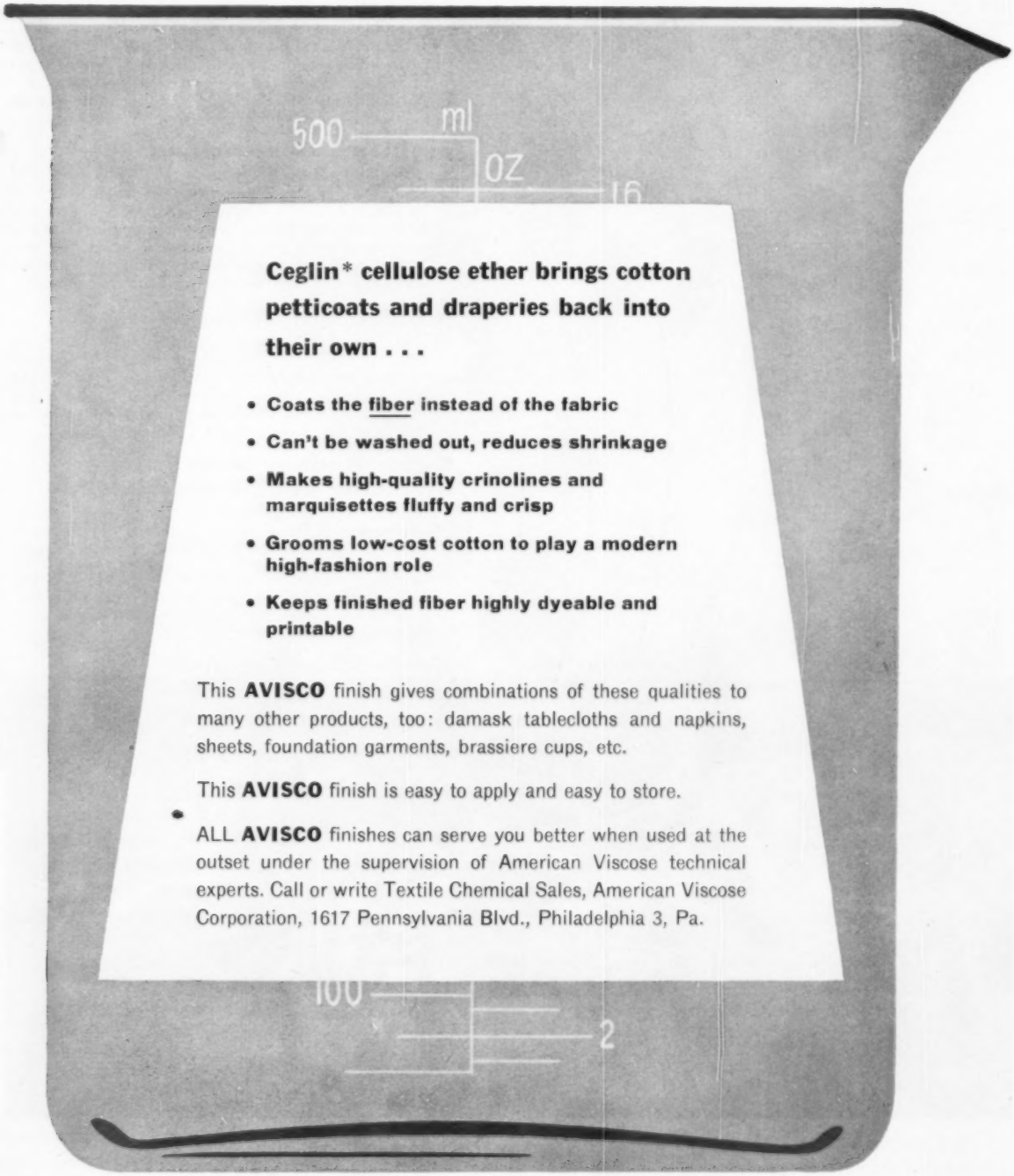
In over a century of service to the textile industry, Rodney Hunt has amassed a wealth of specialized process knowledge and experience. Put us to work on your problems.



RODNEY HUNT MACHINE CO.
TEXTILE MACHINERY DIVISION
66 MILL ST., ORANGE, MASSACHUSETTS, U.S.A.

RODNEY HUNT®

AVISCO* finish "fines



Ceglin* cellulose ether brings cotton petticoats and draperies back into their own . . .

- **Coats the fiber instead of the fabric**
- **Can't be washed out, reduces shrinkage**
- **Makes high-quality crinolines and marquisettes fluffy and crisp**
- **Grooms low-cost cotton to play a modern high-fashion role**
- **Keeps finished fiber highly dyeable and printable**

This **AVISCO** finish gives combinations of these qualities to many other products, too: damask tablecloths and napkins, sheets, foundation garments, brassiere cups, etc.

This **AVISCO** finish is easy to apply and easy to store.

ALL **AVISCO** finishes can serve you better when used at the outset under the supervision of American Viscose technical experts. Call or write Textile Chemical Sales, American Viscose Corporation, 1617 Pennsylvania Blvd., Philadelphia 3, Pa.

GROW WITH AVISCO*

For more information, write direct or use Reader-Service post card.

and sheers" cotton for keeps

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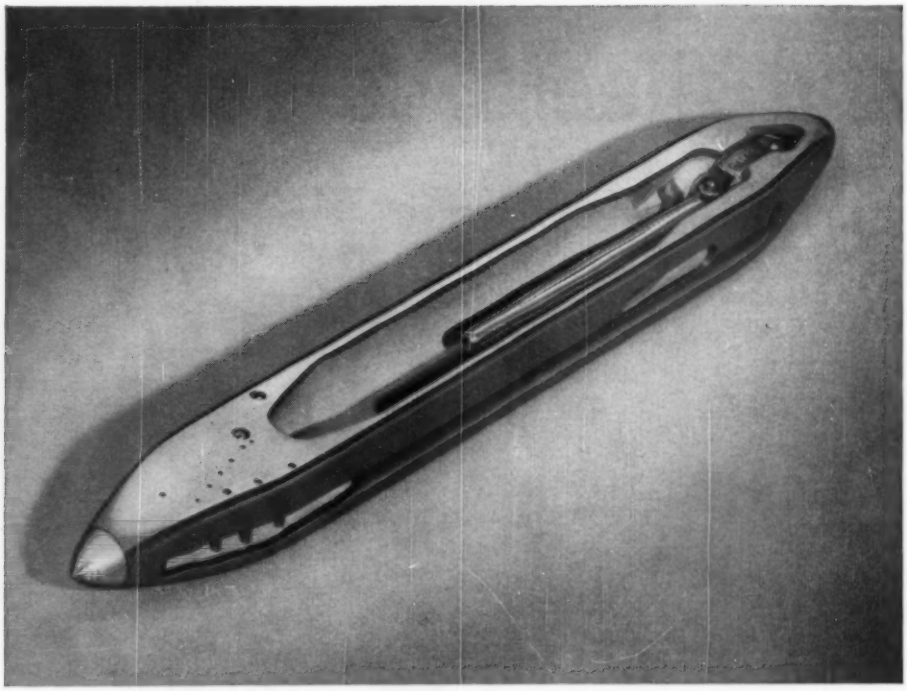
TEXTILE CHEMICALS



For long-wearing, snag-free shuttles

. . . make the facing of a Taylor material

Taylor Shuttle Fibre is strong, durable, highly resistant to abrasion. It wears smoothly and slowly . . . won't cut to rough surfaces that could snag yarn. Only half as heavy as aluminum, it machines readily to smooth finish . . . bonds easily.

Taylor Laminates, Grades L and CEF, fill many special wearing applications. Superior in physical and wearing qualities, they are easily bonded to wood.

Taylor has specialized for many years in supplying materials for textile equipment manufacturers . . . does not make any finished products for the mill. Taylor produces a complete range of vulcanized fibre and laminated plastics . . . for use in shuttles, sizing bobbins, spinning bobbins, package tubes, bearing blocks and cam followers. A wide range of characteristics is available to meet your specifications. Sheets, tubes and rods are supplied in sizes for economical production.

For the textile equipment you manufacture, it pays to specify Taylor materials for performance and economy. And for the equipment you purchase, make sure that wearing surfaces are made of Taylor materials. Write or call your nearest Taylor field office for complete facts.

TAYLOR FIBRE CO.—Plants at Norristown, Pa.—La Verne, Calif.

Call on Taylor for Materials Application Engineering

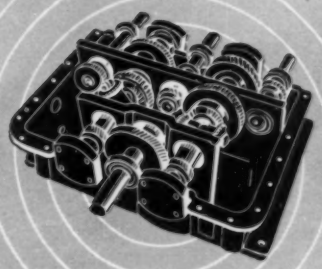
Specialists on Taylor's engineering staff are well qualified to help solve materials problems for textile equipment manufacturers. They will analyze your specific application and help you select and apply the most effective and economical grades of Taylor materials. For a consultation, write or call your nearest Taylor office.

TAYLOR
Laminated Plastics
Vulcanized Fibre

FAIRCHILD SPEED CONTROL

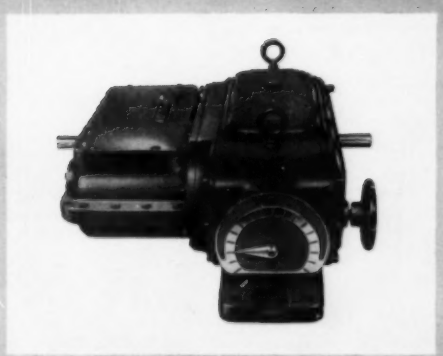
PRODUCTS SOLVE TEXTILE DRIVE PROBLEMS

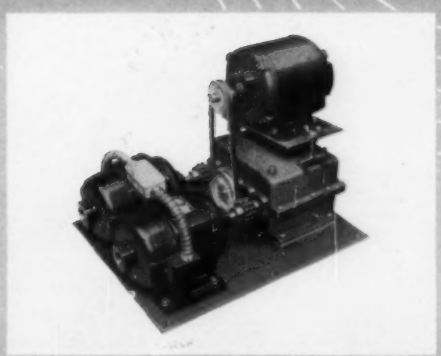
Improved production and quality control in blender, napper, padder, tentering frame and slasher operations.



OUTSTANDING FEATURES

- Wide speed range including zero and reverse
- Maximum efficiency and power utilization
- Full torque at zero speed
- Instantaneous response to control signals
- Control simplicity
- Service-free dependability





For precision of speed and tension control specify Fairchild Specon products. These compact units provide improved production without the need for costly complex controls. Specon variable speed characteristics enable you to adjust easily for variations in material, build up, shrinkage, gauge differences and moisture content. Highly adaptable, Specon perfected tension control can be tailored to your specifications.

A basic adjunct to today's automated methods, Specon has been adopted by leading American manufacturers. It is available in *Electrical Differential* and *Mechanical Differential* models. Both units, by means of a uniquely designed bevel gear differential, effect optimum speed control through wide ranges *including zero and reverse*. Where extremely close control is required within a narrow speed band, Specon Mechanical Draw transmissions will maintain accuracies of speeds and settings not previously available to industry.

Backed by the technical resources and know-how of aviation's pace-making Fairchild Engine and Airplane Corporation, the Speed Control Division offers advanced engineering in variable speed application. Speed Control will be pleased to analyze your drive problem. Write today to Dept. T.

ENGINE AND AIRPLANE CORPORATION

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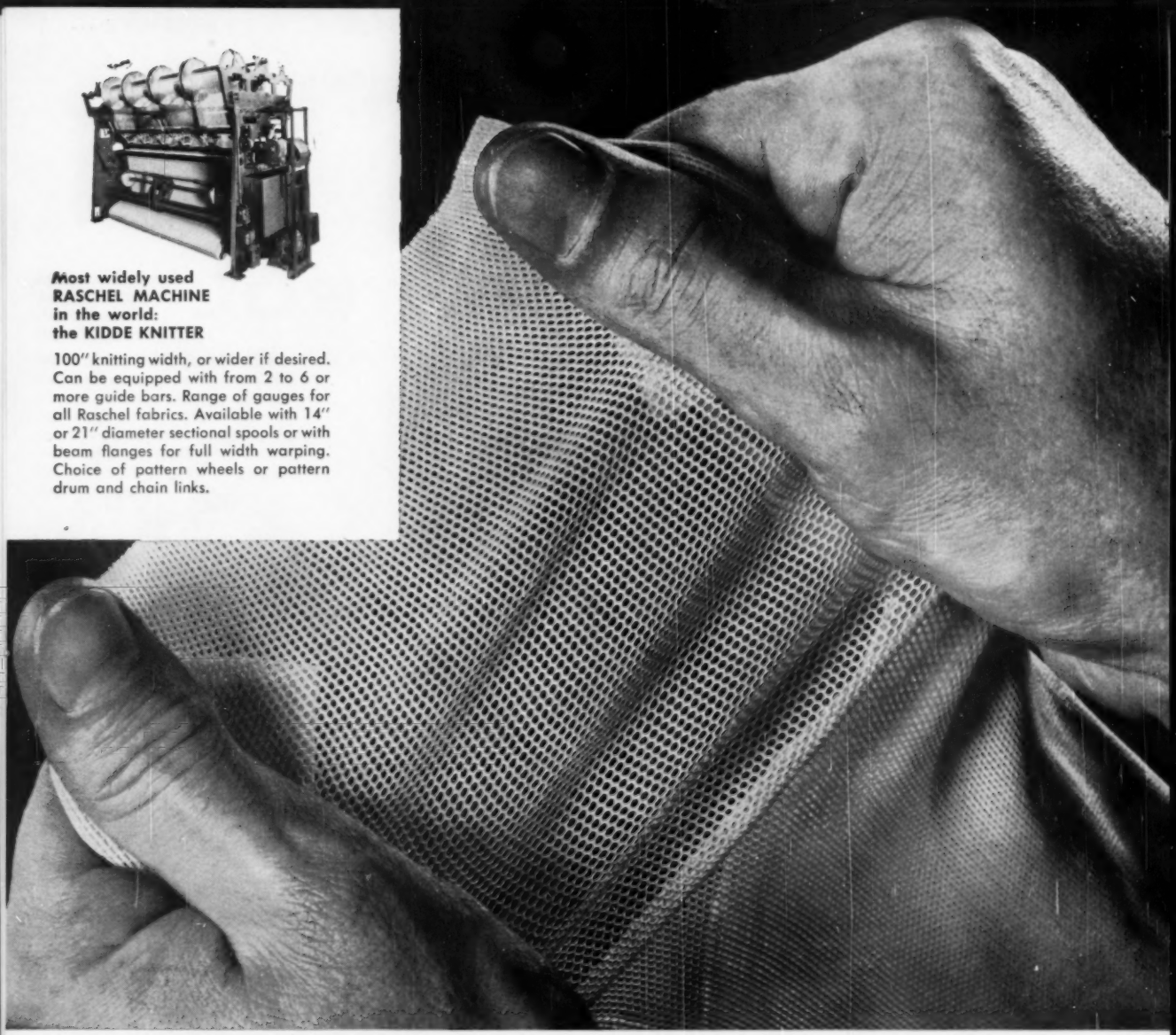
Most widely used RASCHEL MACHINE in the world: the KIDDE KNITTER

100" knitting width, or wider if desired. Can be equipped with from 2 to 6 or more guide bars. Range of gauges for all Raschel fabrics. Available with 14" or 21" diameter sectional spools or with beam flanges for full width warping. Choice of pattern wheels or pattern drum and chain links.



How fast should you run a Raschel machine on 4-bar elastic fabric?

Experienced knitting department supervisors know that *you cannot measure a Raschel machine's output by the minute.* Instead, the wise knitter thinks in terms of pounds of first-quality fabric produced per shift, per week, or per month.

This kind of intelligent evaluation of production rates has made the KIDDE Knitter the world's most widely used Raschel type warp knitting machine. For the KIDDE Knitter backs up high "per minute" speeds with reliability that maintains these speeds over long periods with next-to-no down time for repairs . . . keeps defects well below the acceptable limit for first-grade fabric. It's a versatile machine, too. No matter what kind of Raschel-knit fabric you produce, you'll find that the Model E KIDDE Knitter will do the job. For complete information, write us today.

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS
BEAMERS • CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS

Kidde

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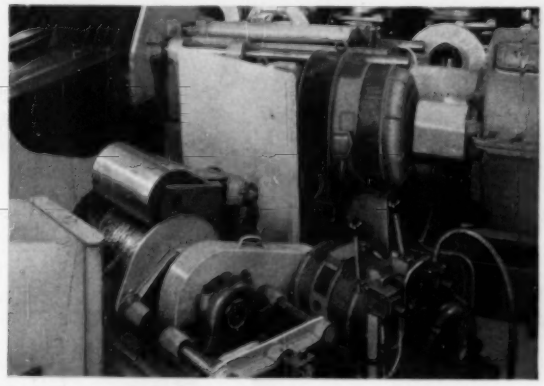
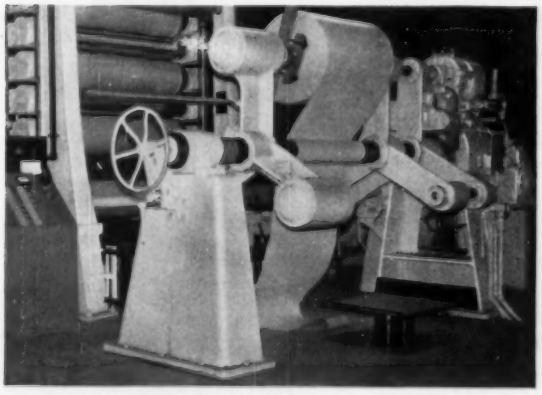
Dynamatic's Long Experience in Solving Industrial Windup and Unwind Problems will be Valuable to You

DYNAMATIC®



Metal slitter powered by Dynamatic Drives. Adjustable speed liquid cooled coupling used as main drive; Ajusto-Spede® Drives, with constant tension control, wind up the metal strips.



Completely Dynamatic driven paper super-calender. Adjustable speed liquid cooled couplings with Eddy-Current brakes drive the calender rolls and center rewinder. Dynamatic liquid cooled brake provides center unwind hold-back. Co-ordinated controls provide for wide-range adjustment of speed and tension.

Dynamatic Eddy-Current Drives with tension controls are used extensively in the fields of paper, rubber, textiles, ferrous and non-ferrous metals, plastics, and printing.

Combined with associated controls, Dynamatic Eddy-Current Drives provide automatic constant tension as the roll diameter changes on center rewinds and unwinds. Constant tension is maintained over a wide range of material delivery speeds without the use of dancer or follower rolls. Controls may be adjusted for tapered tension to increase or decrease tension automatically as the roll changes diameter.

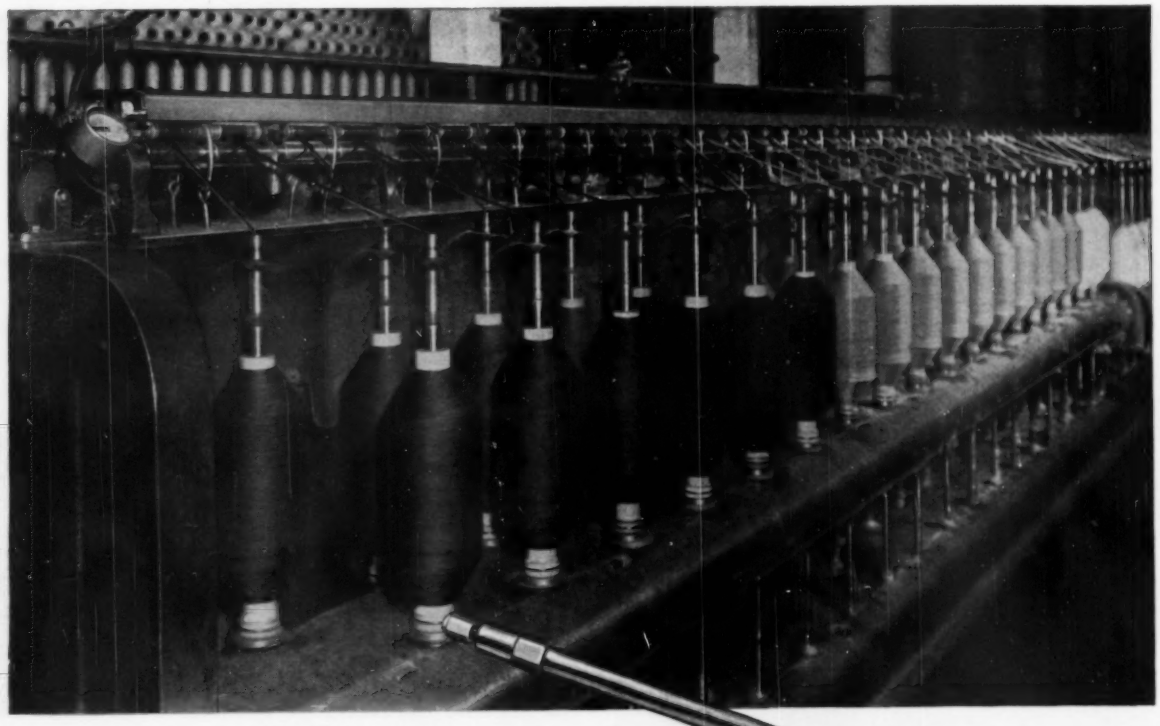
Multi-range tension or tension adjustment over a wide range is easily accomplished at the operator's station to accommodate materials of various thicknesses or widths. Control modifications are available to provide for inertia compensation and other individual requirements. Dynamatic engineers are available for consultation on your problems.

Bulletins giving detailed information on Dynamatic Tension Control will be sent free at your request.

EATON

EATON

DYNAMATIC DIVISION
MANUFACTURING COMPANY
3307 FOURTEENTH AVENUE · KENOSHA, WISCONSIN



Cuts Oil-Drag!

You can cut oil-drag in your spindles by switching to lighter-bodied Sinclair LILY WHITE Oils! These highly refined, extra light colored oils cut power requirements, cut oil consumption, and reduce bolster wear. In this way, LILY WHITE Oils save you money, reduce maintenance needs, and prevent needless interruptions in production.

Moreover, you can also use Sinclair LILY WHITE Oils for superior needle lubrication. The light color means that the problem of staining is eliminated. Needles last longer too!

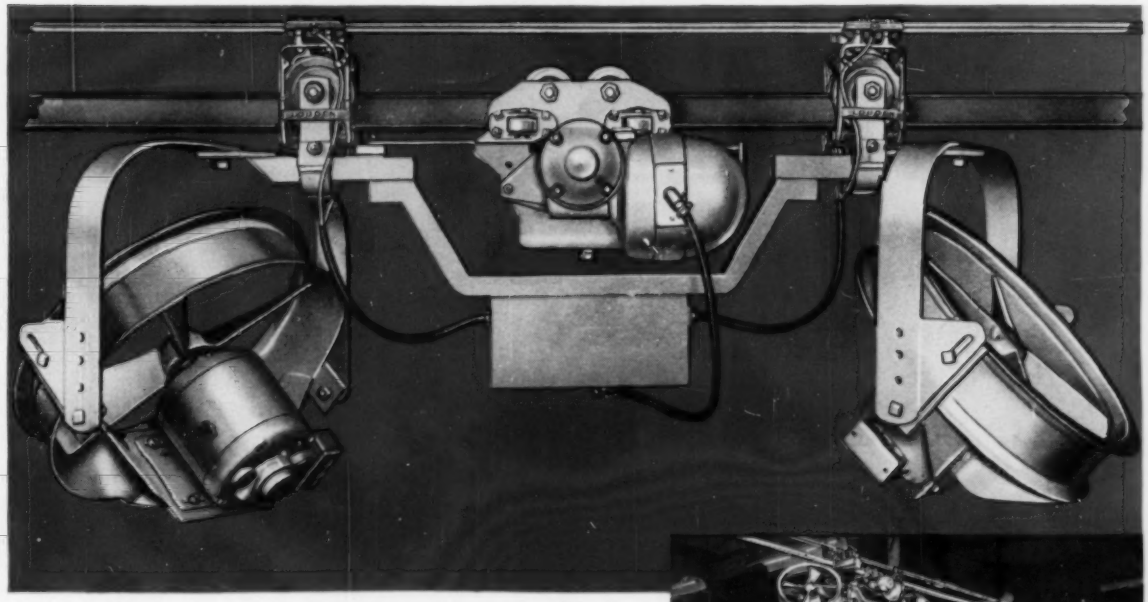
Sinclair LILY WHITE Oils are available in seven grades – four grades in a straight mineral oil, and an additional three grades with additives for supreme protection against wear and rust. A Sinclair Lubrication Engineer will be happy to make recommendations to meet your *particular* problem. There's no obligation. Just contact your local Sinclair office or write Sinclair Refining Company, 600 Fifth Avenue, New York 20, N. Y.

SINCLAIR LILY WHITE

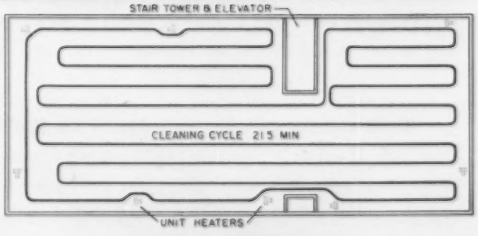
SPINDLE AND NEEDLE OILS

For more information, write direct or use Reader-Service post card.

the Louden Automatic TWIN-FAN CEILING CLEANER



In the installation pictured and diagrammed above, a Louden Automatic Twin-Fan Cleaner travels continuously over a Louden Track 2,800 feet long. It makes the complete round trip every 22 minutes, blanketing the entire spinning room of a mill with air cleaning action.



KEEPS MILL CEILINGS CLEAN AND LINT-FREE

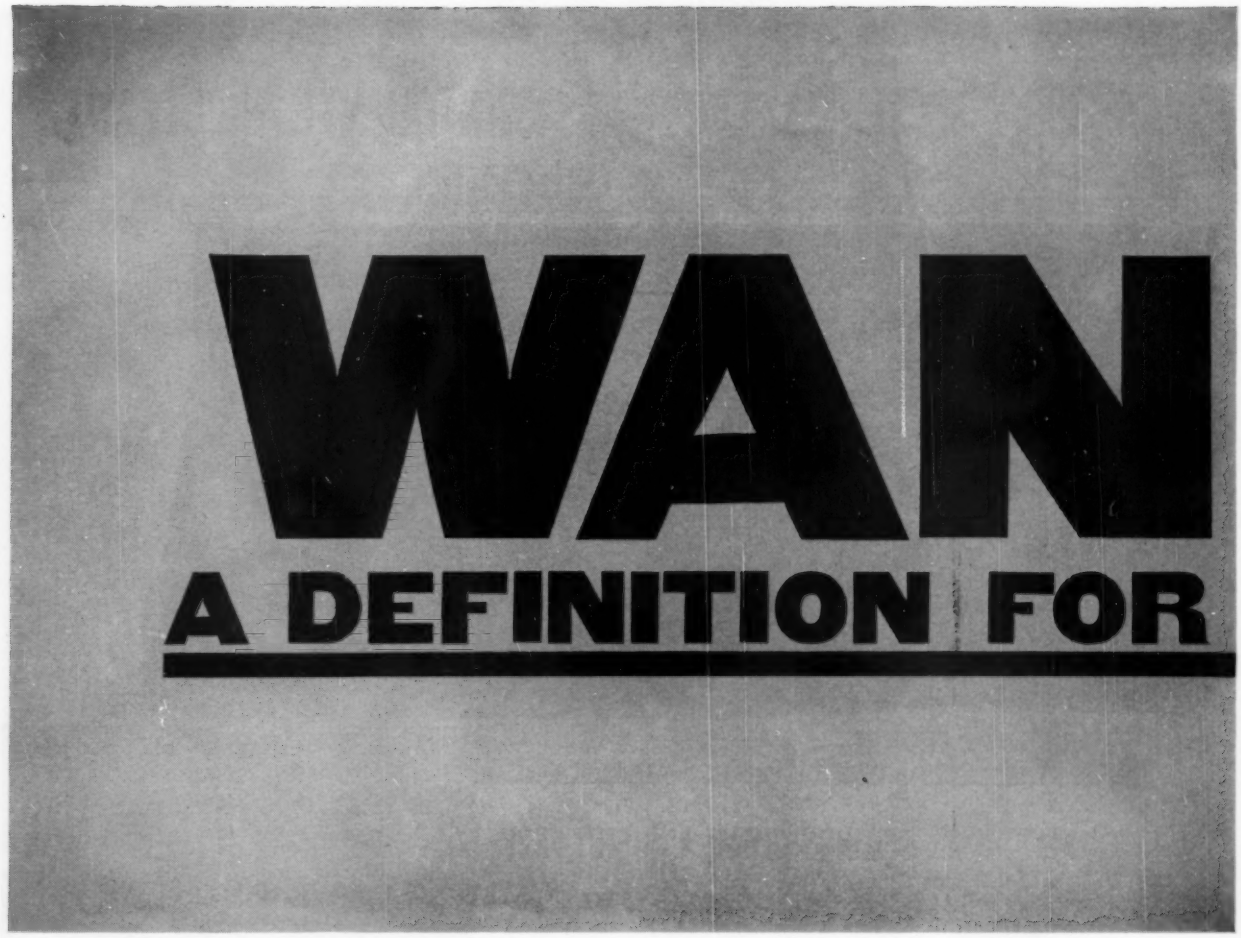
The Louden Twin-Fan Cleaner is proving a boon to more and more mills . . . because it keeps their ceilings *continuously* clean, *continuously* free of lint. The twin fans sweep both sides of the track simultaneously. Each fan is independently adjustable and can be pointed in any direction, thus meeting the special needs of your room. It cleans without disturbing machine processes going on below. The threat of "gouts" or "slubs" is eliminated, together with the need for manual blowing down, or ladder climbing to adjust stationary fans. There are no dead air pockets; humidity is even throughout. Automatic shut-off and turn-on for passage through areas where blowing is not needed is one of the features available. And you can be sure of highest dependability, efficiency and economy because of Louden's long experience in building Monorail Equipment of every type. Let a Louden engineering representative tell you more, what it will cost, what you will save. Your inquiry will receive prompt attention.

THE LOUDEN MACHINERY COMPANY
6104 Court St., Fairfield, Iowa
A Subsidiary of Mechanical Handling Systems, Inc.

Louden
MONORAIL & CRANES

Since 1867—the first name in materials handling

 For more information, write direct or use Reader-Service post card.



BIG BUSINESS—BIG PROBLEM

Wash & wear is one of the biggest, most promotable ideas ever to hit the industry. There's big money in it for the manufacturer and for the retailer. There are big advantages for the consumer. And there's a big problem we have yet to solve: wash & wear needs a definition. A definition we can agree on and live by.

THE COST OF CONFUSION IS HIGH

The lack of uniform standards for wash & wear garments has created costly problems for every level of the industry. Even salespeople (especially retail) are confused. Too often, the consumer buys merchandise in good faith only to discover she's been misled into expecting performance the garment can't possibly deliver. That kind of thing costs time, sales—and it could eventually cost the industry the faith of the buying public.

SO LET'S GET OUR CLAIMS STRAIGHT

Even where people should be "in the know"—millmen, cutters, retailers—the lack of standards has caused plenty of confusion. To gain competitive advantage, salesmen have sometimes gone overboard on claims. Where the facts aren't always clear, there has been a tendency to quote performance features they *hope* are true. These are all danger signs and the road ahead will be getting rough UNLESS AND UNTIL THE INDUSTRY REACHES SOME AGREEMENT ON A SENSIBLE DEFINITION.

THE PUBLIC IS WAY AHEAD OF US

The strangest fact of all is that the public seems far less confused about wash & wear than we in the industry. Consumers have seen the term on hundreds of thousands of hang tags, thousands of retail and national ads, on detergent powders, and in the instruction booklets they get with automatic washers.

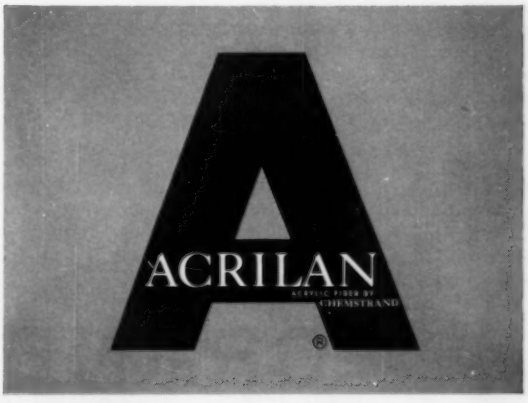
THE CHEMSTRAND CORPORATION • GENERAL SALES OFFICES: 350 FIFTH AVE., NEW YORK 1, N. Y. • DISTRICT SALES OFFICES: 9 Rittenhouse Place,

For more information, write direct or use Reader-Service post card.

They've had time to make up their minds about wash & wear. And they don't always believe what we want them to believe. The buying public is fast deciding to rely only on the minimum advantages of wash & wear, thereby shortchanging themselves and the industry. It's time to give our customers the full benefits of wash & wear. Time to put our claims into phrases the consumer can believe and the merchandise can live up to.

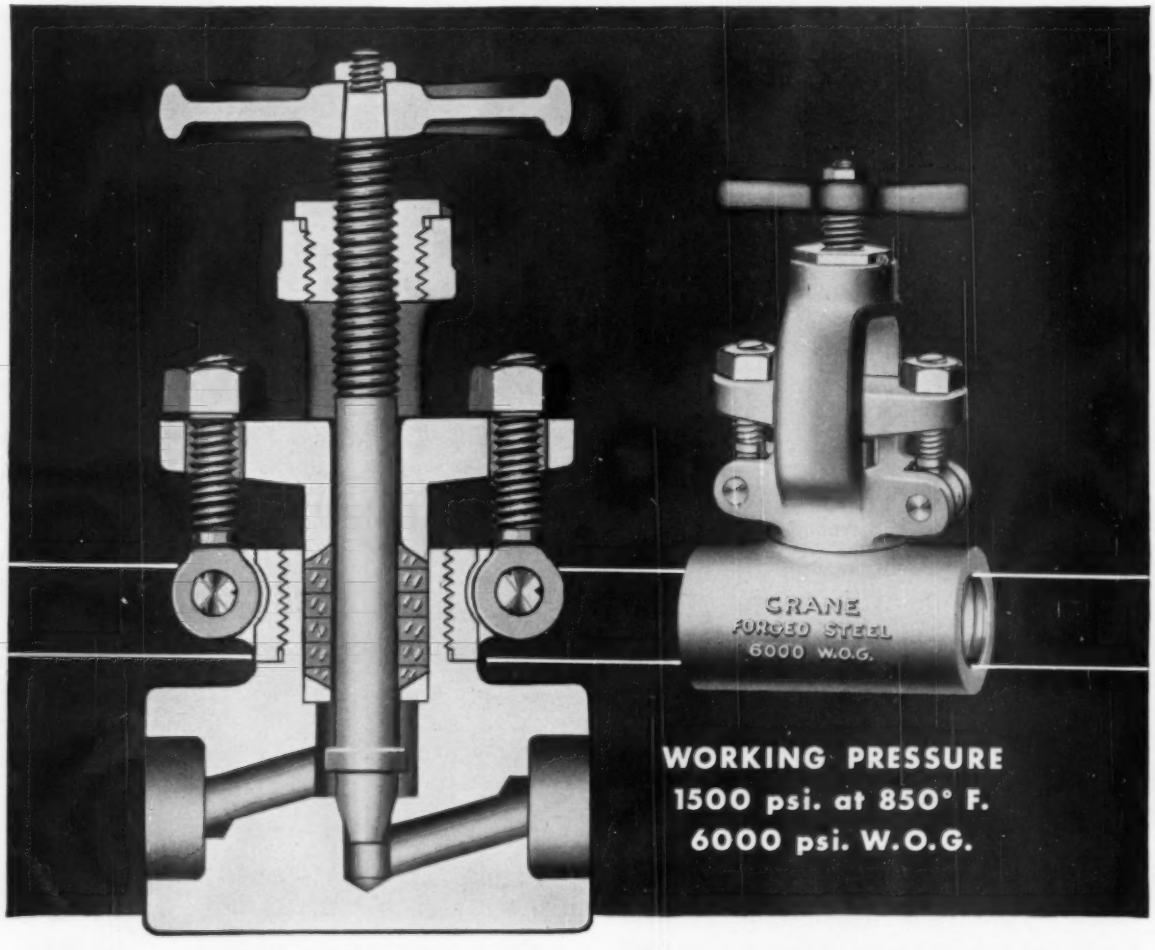
WE PROPOSE A DEFINITION

In the simplest possible language, here's what we propose wash & wear mean from now on: **A WASH AND WEAR GARMENT IS ONE THAT CAN BE WASHED BY HAND OR IN A WASHING MACHINE AT THE WARM WATER SETTING. WHEN DRIP-DRIED IT RETAINS ITS CREASE OR PLEATS, AND RECOVERS SUFFICIENTLY FROM WRINKLES TO NEED LITTLE IF ANY IRONING.** This is the definition Acrilan will be pushing in its huge advertising campaign. It's a definition that is easy to understand and possible for the industry to live with. It will clear up a lot of confusion, eliminate a lot of unnecessary waste, and infinitely strengthen the position of wash & wear in the garment field.



Ardmore, Pa.; 4 Pearl Street, Dedham, Mass.; 222 South Church Street, Charlotte, N. C. • PLANTS: ACRILAN® ACRYLIC FIBER—Decatur, Ala.; CHEMSTRAND® NYLON—Pensacola, Fla.

Now Available



New Crane Forged Steel Instrument Valves

Been looking for an exceptionally rugged, compact, and low-priced stop valve for your small hydraulic or high-pressure, high-temperature instrument lines?

Crane has developed it—sizes ¼", ⅜" and ½", in both screwed and socket-welded patterns. It's the all-new Crane Forged Steel Instrument Valve, and you can specify it now for immediate delivery.

Will Handle Many Services

Note closely the over-all design and construction shown above of this new Crane valve. Oversized stuffing box—heavy-duty Crane Exelloy stem with integral disc—bolted gland—swinging gland eye bolts—outside screw and yoke construction—all add up to the high performance and low maintenance you want in a valve for your instrument panels, orifice meters, bypass and gauge lines, regulator leads, and other hydraulic and high pressure temperature lines.

Literature on Request

These rugged, low-cost stop valves are built for 1500 psi. at 850° and 6000 psi. W.O.G. Construction and materials are job-engineered by Crane experts—backed by a century of quality manufacturing, matchless experience. You'll want complete information on the all-new Crane Forged Steel Instrument Valves.

For literature contact your local Crane Representative, or write to address below.

CRANE VALVES & FITTINGS

PIPE • KITCHENS • PLUMBING • HEATING

Since 1855—Crane Co., General Offices: Chicago 5, Ill. Branches and Wholesalers Serving All Areas

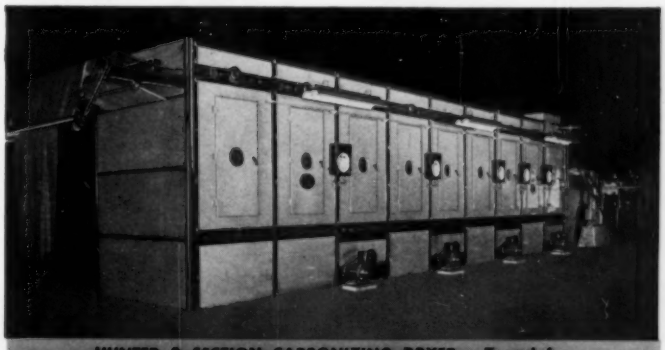
For more information, write direct or use Reader-Service post card.

HUNTER Drying Equipment Builds Profits at STRONG-HEWAT

At Strong-Hewat and many other top-ranking mills, an increasing number of Hunter Dryers are playing a key part in building profits. The reason: Hunter Dryers process fabrics faster, safer, at lower steam, power and labor costs, with results unsurpassed for quality.

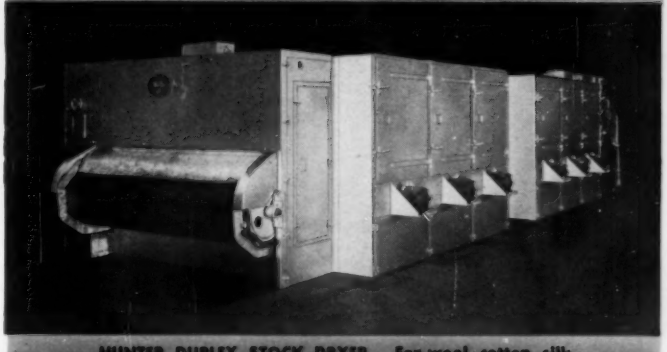
HUNTER BUILDS PROFITS FOR YOU WITH A COMPLETE LINE OF DYEING AND FINISHING EQUIPMENT FOR *EVERY* FABRIC REQUIREMENT:

Wool
Cotton
Blends
and ALL
Synthetics



HUNTER 9 SECTION CARBONIZING DRYER. Zoned for controlled carbonizing of woolens and worsteds. Eliminates streakiness, tendering, below standard tensile strength. Bulletin CC.

HUNTER UNIFLOW TENTER DRYER. For woolens, worsteds, blends, plushes, felts and synthetics. Dries up to 60 yards per minute. Bulletin UTD-2.



HUNTER DUPLEX STOCK DRYER. For wool, cotton, silk, rayon staple, rags, linters. Exclusive method permits stock to be turned over during drying cycle by controlled air streams. Bulletin DSD.

JAMES HUNTER MACHINE COMPANY

BUILT BY HUNTER ...IT'S DEPENDABLE

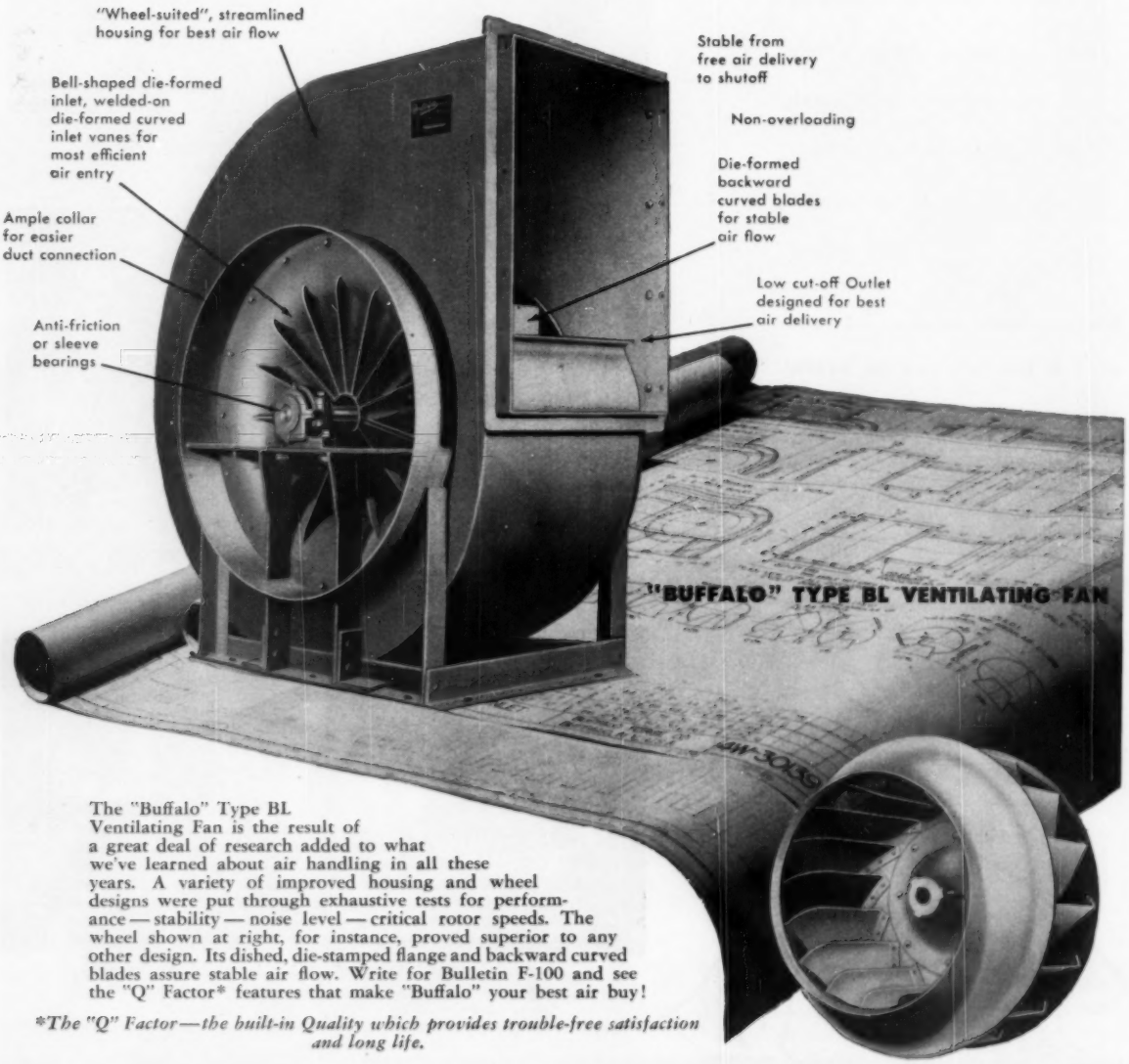
NORTH ADAMS, MASSACHUSETTS FOUNDED 1847

plus production

- efficient operation of modern equipment
- less down time of equipment
- quick, easy repair....rapid parts delivery

The Best of Our 79 Years

OF FAN ENGINEERING ARE IN IT!


"Wheel-suited", streamlined housing for best air flow
Bell-shaped die-formed inlet, welded-on die-formed curved inlet vanes for most efficient air entry
Ample collar for easier duct connection
Anti-friction or sleeve bearings
Stable from free air delivery to shutoff
Non-overloading
Die-formed backward curved blades for stable air flow
Low cut-off Outlet designed for best air delivery
"BUFFALO" TYPE BL VENTILATING FAN

The "Buffalo" Type BL Ventilating Fan is the result of a great deal of research added to what we've learned about air handling in all these years. A variety of improved housing and wheel designs were put through exhaustive tests for performance — stability — noise level — critical rotor speeds. The wheel shown at right, for instance, proved superior to any other design. Its dished, die-stamped flange and backward curved blades assure stable air flow. Write for Bulletin F-100 and see the "Q" Factor* features that make "Buffalo" your best air buy!

**The "Q" Factor—the built-in Quality which provides trouble-free satisfaction and long life.*

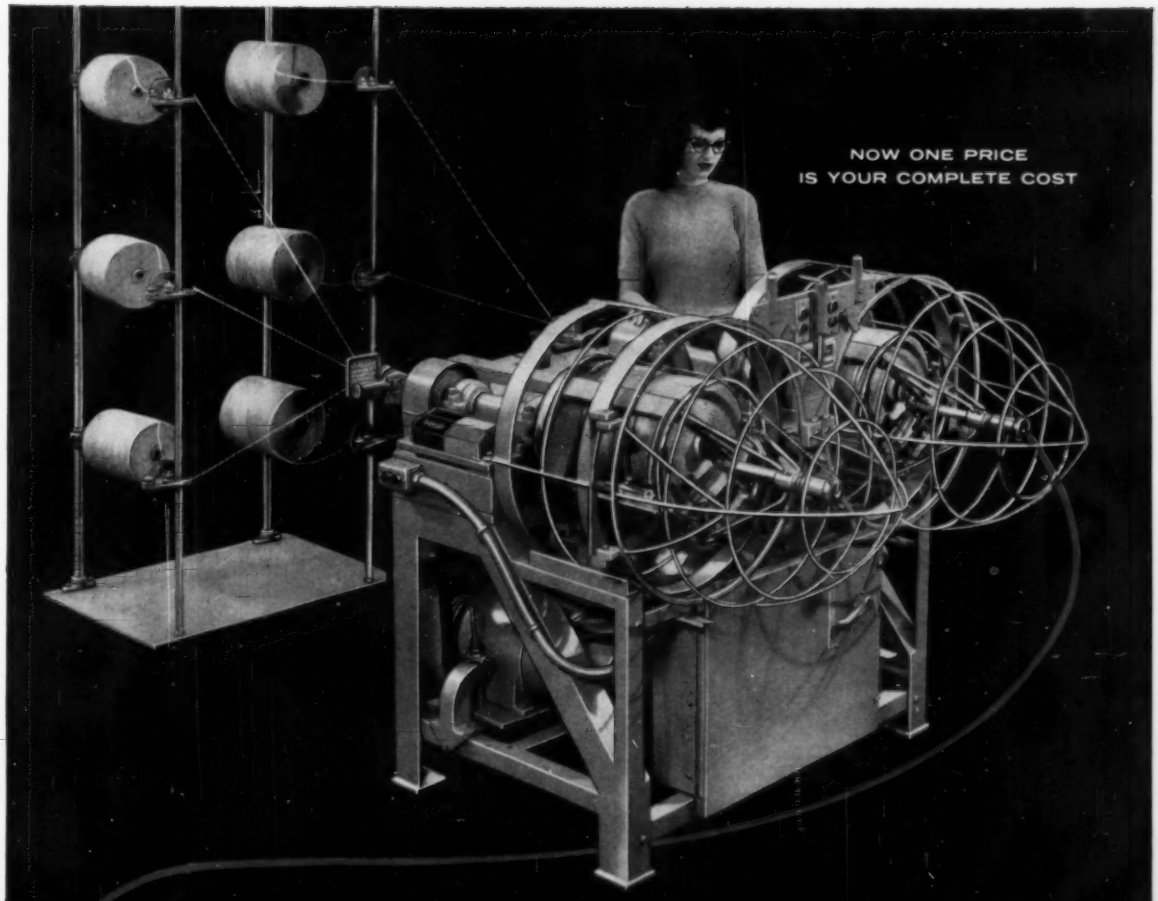
"Buffalo"

BUFFALO FORGE COMPANY

BUFFALO, NEW YORK

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

VENTILATING AIR CLEANING AIR TEMPERING INDUCED DRAFT EXHAUSTING FORCED DRAFT COOLING HEATING PRESSURE BLOWING



NOW...NO ROYALTY!

on *Whirlwind*® twister winder production

SEE HOW THIS NEW MACHINE CAN CUT COSTS FOR YOU!

- More than doubles existing twisting speeds—twists up to 11,000 T. P. M.—winds up to 150 yd./min.
- 2 for 1 twist—.85 to 7.76 T. P. I.
- Large precision sales packages up to 30 lbs., either cone or tube.
- 2 to 120 ply count, or higher.
- Produces wide variety of finished cord sizes—2,000 to 50,000 denier.
- Ruggedly built—easy to operate.
- Requires minimum floor space.

WARNER & SWASEY Cleveland PRECISION MACHINERY

TEXTILE MACHINERY DIVISION

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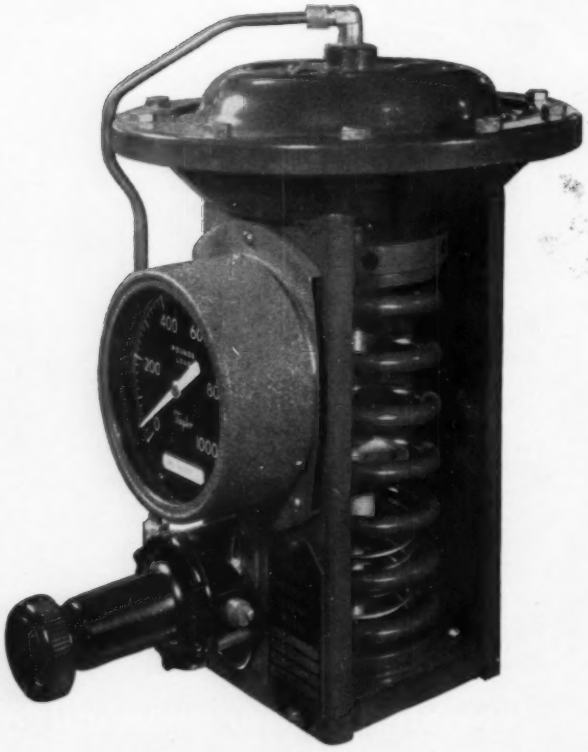
® Trademark

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS . . . WITH A WARNER & SWASEY

SQUEEZE ROLL PRESSURE PROBLEMS?

Here's the field-tested Taylor answer



1 **Easy-to-read dial** gives direct pressure readings of actual roll pressure. Also available with remote indication or record for panel use.

2 **One knob** adjusts actual roll pressure.

3 **Unit** is mounted directly over the journal. Pressure is applied directly to the roll.

4 **Spring automatically** raises roll when supply pressure is shut off.

5 **Volumetric element** — a Taylor development—measures pressure being applied directly to squeeze roll.

The Taylor Squeeze Roll Pressure Controller tells you just how much pressure you have on each end of your size box squeeze roll. It measures and permits manual control of actual *pounds of pressure* applied *directly* to the roll . . . unaffected by friction or leaks in air cylinder.

One unit is installed on each end of the roll. Each can apply up to 1000 pounds pressure, for a total pressure of 2000 pounds plus the weight of the roll.

For Calender Rolls, Dye Padder Rolls, and other higher pressure applications, a similar unit is available with a 2500 pound capacity . . . to deliver up to 5000 pounds pressure plus the weight of the roll, when used in pairs.

Taylor Squeeze Roll Pressure Control has been thoroughly field tested in a number of textile mills. It is a logical outgrowth of Taylor's development of the volumetric measuring principle for difficult tension and pressure measuring jobs. Units are available for pressures up to 200,000 pounds and tensions from 0 to 30,000 pounds.

For full details on Taylor's Squeeze Roll Pressure Control, or for help on any similar load control problem, call your Taylor Field Engineer or write for **Bulletin 98232.** Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.*

Taylor Instruments
MEAN
ACCURACY FIRST
IN HOME AND INDUSTRY

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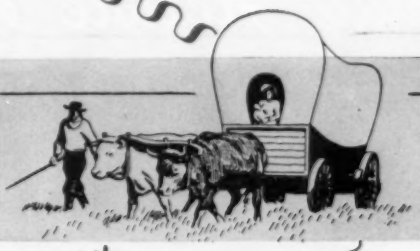
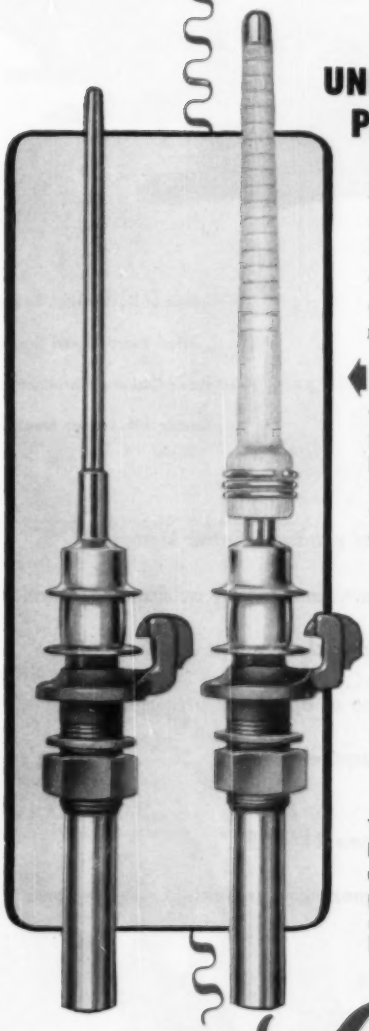


*Pioneer** SPINDLES
for Spinning

UNEQUALLED for PERFORMANCE
PRODUCTIVITY • LONG LIFE



For outstanding performance, productivity, and low cost of operation, Whitin PIONEER Spindles for spinning are specified by leading mills. Their design, construction, and manufacture are the result of more than a century's experience.

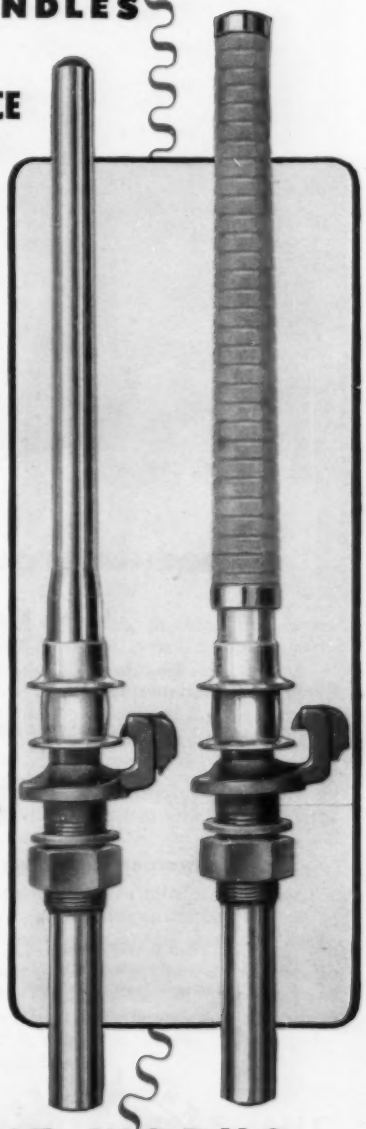
TOP DRIVE TYPE**

Whitin's newest spindle for wood filling bobbins drives the bobbins from inside the bobbin nose or top. Thoroughly tested in large installations in several mills, it provides many attractive advantages over conventional cone drive filling spindles.

- **Increase of 15-20% in spindle speed**
- **Approximately 10% more yarn on the bobbin**
- **Improved bobbin wind secured through better tension**
- **Bobbin centralizing on own axis means less vibration**
- **Improved spinning production and quality**

****ALUMINUM SLEEVE TYPE**

This spindle for paper tubes is acclaimed by the users of approximately 2,000,000 as unmatched for its long wear, simplicity in plumbing and maintenance, smooth running characteristics, and extremely low lubrication costs.



* Trade-Mark

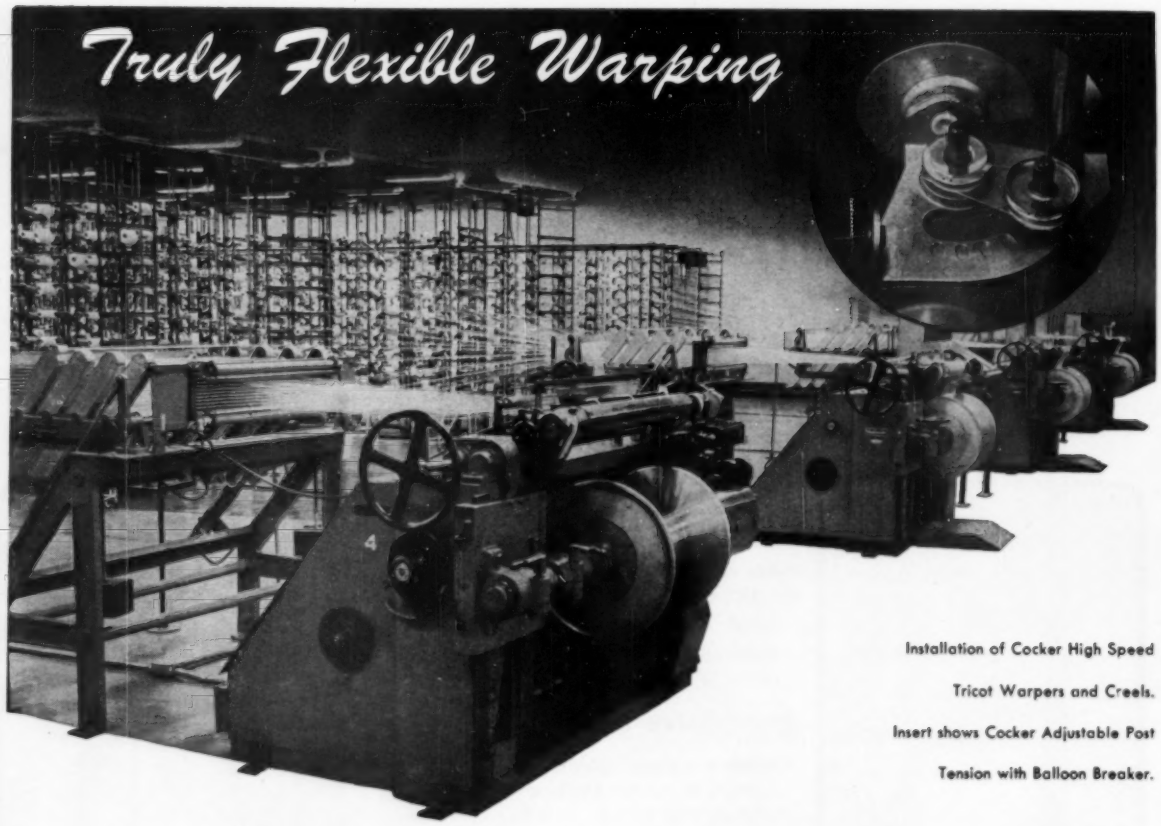
** Anti-Friction, of course

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

Truly Flexible Warping



Installation of Cocker High Speed Tricot Warpers and Creels. Insert shows Cocker Adjustable Post Tension with Balloon Breaker.

This combination of Cocker Creels and High Speed Tricot Warpers produces better knitting beams. It will efficiently handle a large variety of yarns and is truly outstanding on all fine denier yarns. The range of control provided by the Adjustable Tensions . . . the variable indicating presser roll . . . and its range of speed and ease of operation provides the ultimate in flexibility to meet varying knitting requirements.

The warpers and creels shown here are for handling filament beams 21″ x 21″.

These machines can also be built to meet your individual requirements.

Visit Cocker's Booths
No. 830 and 831,
Southern Textile Exhibition

Write or wire for full information.

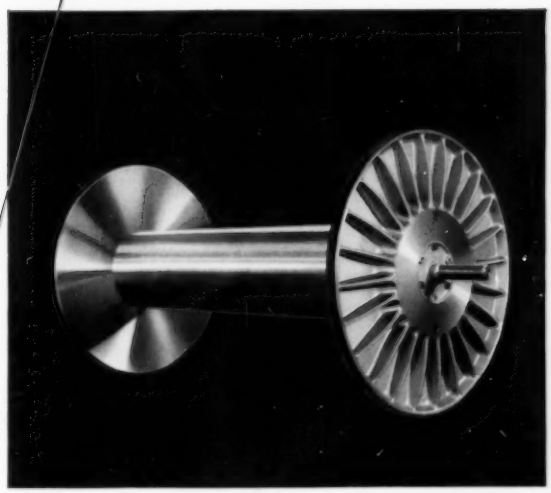
New England and Canadian Representative:
J. S. Fallow & Co., 279 Union St., New Bedford, Mass.
1215 Greene Ave., Montreal 6, Canada

THE LEADER
COCKER
AROUND THE WORLD

Machine and Foundry Co., Gastonia, N. C.

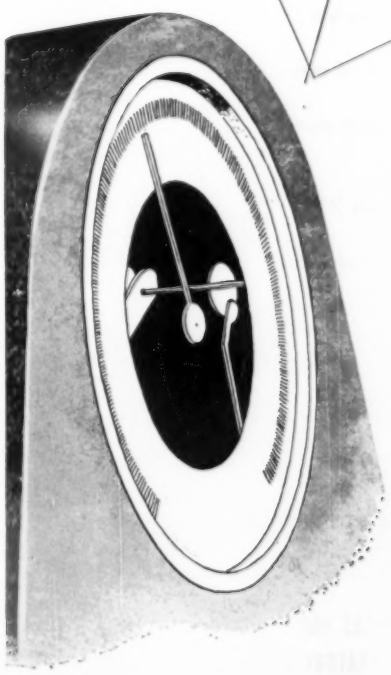
WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

Beaming Nylon?



severe test

proves strength of new HAYES aluminum nylon beam



During load tests on a million-pound testing machine this Hayes Aluminum Nylon Beam withstood a load of 263,000 pounds without failure. With continued loading, the head casting cracked, — even then the beam still held a load of 80,000 pounds, which is considered sufficient for removal of nylon yarn without loss of material. There was no failure of the threads holding head to barrel. Thousands of these beams are now in use for beaming nylon.

The NEW beam is the only aluminum section beam being produced primarily for nylon and includes these features which make it of particular interest to the textile industry:

— available in 30″ and 32″ head diameters. 54¼″ traverse.
— heavy center hub construction, with 24 reinforcing ribs.
— ½″ minimum wall, high strength aluminum barrel.
—adaptable for use with all current makes of warpers.

This beam is merely another instance of Hayes long experience in the manufacture of light weight metal beams. Its greater head strength, increased rigidity, permanent running balance, and glass-smooth, rust-proof surfaces exist in all Hayes beams. Write today for complete information on Hayes beams.

HAYES INDUSTRIES, INC.
JACKSON, MICHIGAN

THE WORLD'S LARGEST PRODUCER OF LIGHT METAL BEAMS

Southern Representative:
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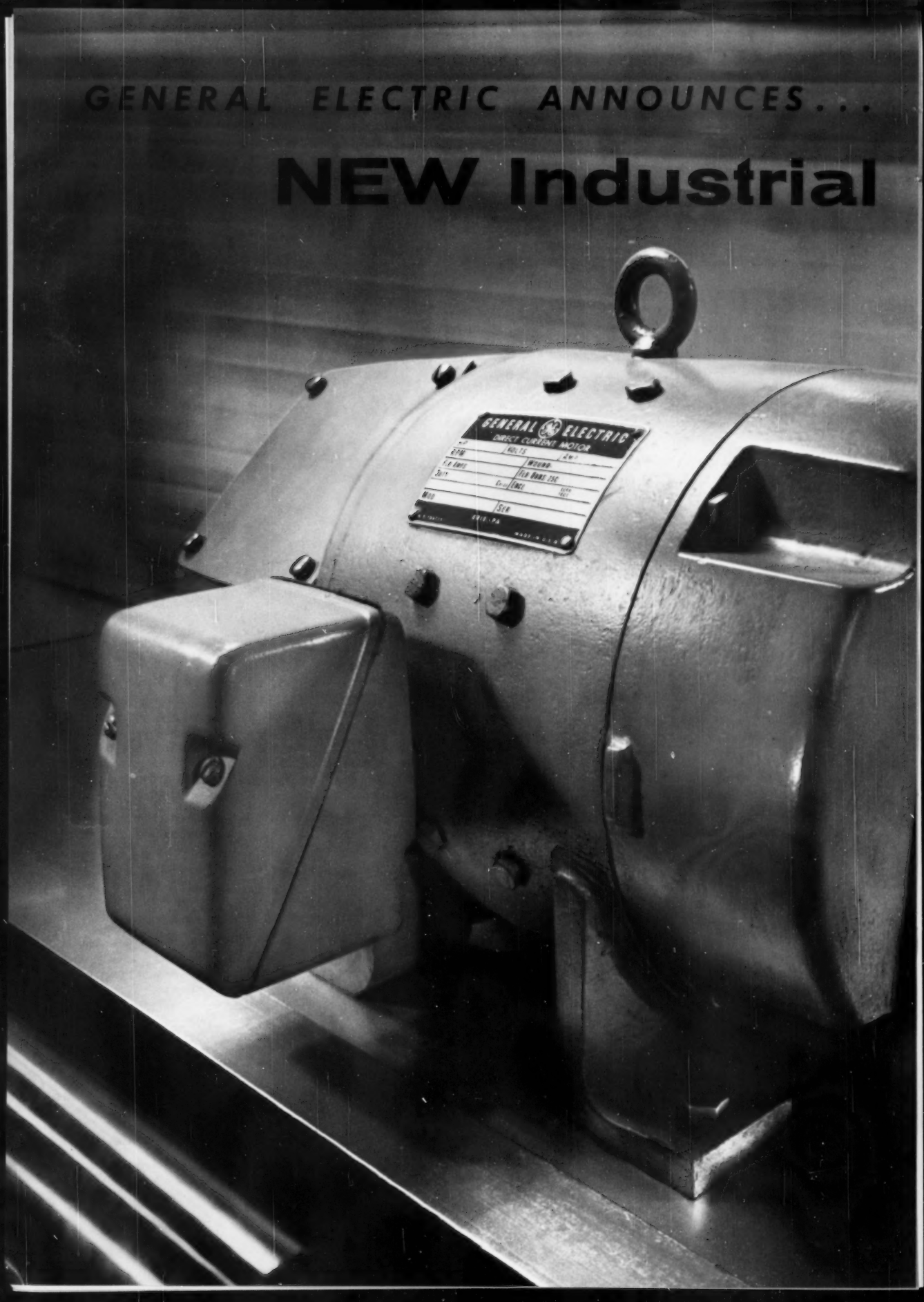
J. S. Fallow & Co., Montreal, Canada

GENERAL ELECTRIC ANNOUNCES . . .

NEW Industrial



Direct-current Motor

KINAMATIC* a new standard in direct-current motors, gives your machines wider speed ranges, greater output

To meet modern industrial needs for faster, more automatic, more continuous production, General Electric has designed an entirely new direct-current motor—the d-c Kinamatic.

Designed for Automation—Now, a direct-current motor has been designed for the modern job it has to do—either as individual motor drive or in regulating systems. The new General Electric d-c Kinamatic motor supplies the wide speed range and versatility required for today's manufacturing methods. It is designed for the close control of machines and split-second timing of processes essential to higher output.

Accelerated Production—The new d-c Kinamatic motor will modernize your equipment, give it increased power, higher speeds, greater output capacity. With the quick-acting G-E Kinamatic motor, your machines will process a greater variety of products . . . faster . . . easier . . . and with less maintenance and spoilage.

More Powerful—By combining advanced design with improved materials and manufacturing techniques, General Electric engineers have packed more power into the entire Kinamatic line. The powerful Kinamatic motor, with new stamina and durability, is ready to become one of your most effective weapons for keeping costs down, for meeting competition, for boosting productivity levels.

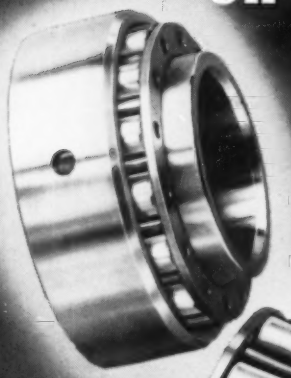
Engineering Help—Industrial specialists in 149 conveniently located General Electric Apparatus Sales Offices have the complete story on how the new d-c Kinamatic motors and generators can benefit your operation. For full details, contact your G-E Sales Representative, or write for Bulletin GEA-6355. *Direct Current Motor and Generator Department, General Electric Company, Erie, Pennsylvania.* 813-1

* Trade Mark of the General Electric Company

Progress Is Our Most Important Product

GENERAL ELECTRIC

On High-Speed Spindles or High-Inertia Card Drives . . .



TYPE D

Steel cage, metric series roller assembly with solid inner and outer race.

Steel cage, inch series, roller assembly, hardened or unhardened, no inner or outer race.

Rollway Bearings Reduce Maintenance Costs and Improve Work

Spindles, lickers in, card cylinders, feed rolls, cylinder shafts, all work better on anti-friction bearings, and all require a bearing specifically adapted to the space, speed, load, over-load, torque, temperature, lint and many other factors.

That's why Rollway *Solid Cylindrical* Roller Bearings with their wide range of standard types and sizes in steel-cage, inch and metric series, afford the best balance of low power consumption, uniform rotation and tension on yarns and fabrics, and longer continuous operation without servicing or replacement.

ROLLWAY BEARING CO. INC.
Syracuse, N. Y.

TYPE PA

Steel cage, inch series, roller assembly with heavy duty planished sleeve.

TRU-ROL

Precision steel-cage, heavy-duty bearing with contoured guide lips, assuring maintained roller alignment, free rolling, approaches that of the most costly bronze-retainer bearing.

Let Our Engineers Work for You

Forty-five years of design, operating and manufacturing experience are at your service for the asking. No charge. No obligation. Every detail held in strict confidence. Just send us details of load, speed and operating requirements. Or ask for one of our engineering representatives to call.

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ROLLWAY® BEARINGS

Complete Line of Radial and Thrust Cylindrical Roller Bearings

your Two best sources for UREA

Allied

...and

Allied

Allied's Nitrogen Division has 2 urea plants – one at South Point, Ohio and one at Omaha, Nebraska. When considering your source of UREA supply, Allied tops the list with its multi-plant production. Quality? Very high. Delivery? Fast – no matter where you are, thanks to widely separated producing locations. Carlots and trucklots from the plants. LCL from warehouse stocks in Passaic, N. J.; Chicago, Ill.; Providence, R. I.; East St. Louis, Ill.; and Charlotte, N. C. All shipments in easy-to-use, 100 lb. moistureproof multiwall paper bags.

Dept. U1-30-1

Allied Chemical — NITROGEN DIVISION

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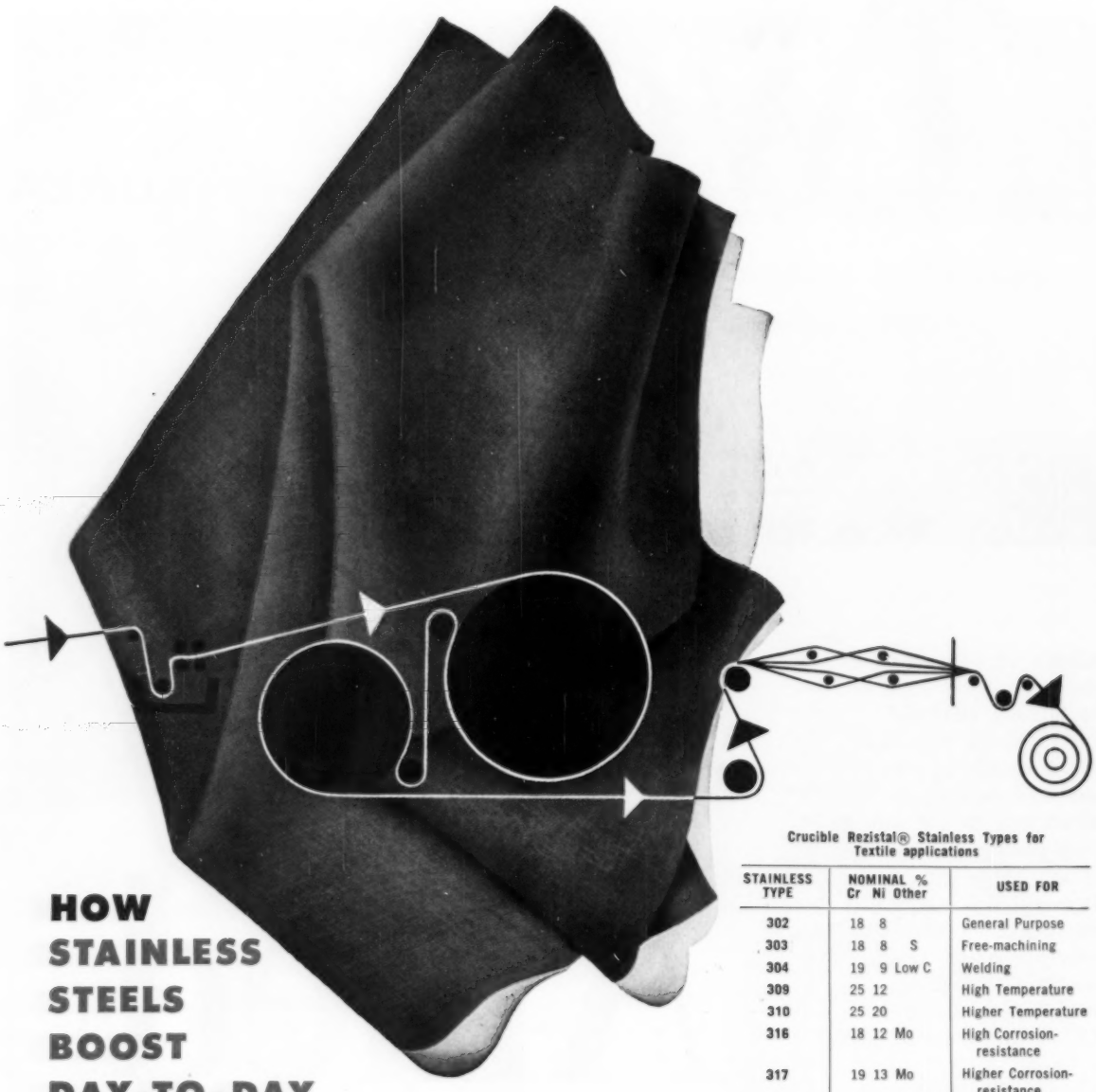

HOW STAINLESS STEELS BOOST DAY-TO-DAY SAVINGS in textile production

Crucible Rezistal® Stainless Types for Textile applications

STAINLESS TYPE	NOMINAL % Cr	Ni	Other	USED FOR
302	18	8		General Purpose
303	18	8	S	Free-machining
304	19	9	Low C	Welding
309	25	12		High Temperature
310	25	20		Higher Temperature
316	18	12	Mo	High Corrosion-resistance
317	19	13	Mo	Higher Corrosion-resistance
318	18	12	Mo, Cb	Welding (stabilized)
321	18	8	Ti	Welding (stabilized)
347	18	8	Cb	Welding (stabilized)

To plant and mill operators, stainless steel is not a luxury metal—but the most economical construction material they can use wherever there's need for its exceptional corrosion-resistance, strength and cleaning ease.

Add to these properties its remarkable resistance to wear and abrasion – and you can see why Crucible stainless steels mean longer service life, increased production, reduced maintenance and cleaning time, fewer replacements and repairs... throughout the textile plant.

See how stainless steel can boost day-to-day savings in your plant. Get practical, economy-minded advice on stainless selection, fabrication and maintenance in your free copy of "Making the Most of Stainless Steels in the Textile Industry." Send for it today. Or call your local Crucible representative. *Crucible Steel Company of America, Henry W. Oliver Building, Pittsburgh 22, Pa.*

CRUCIBLE first name in special purpose steels

Crucible Steel Company of America

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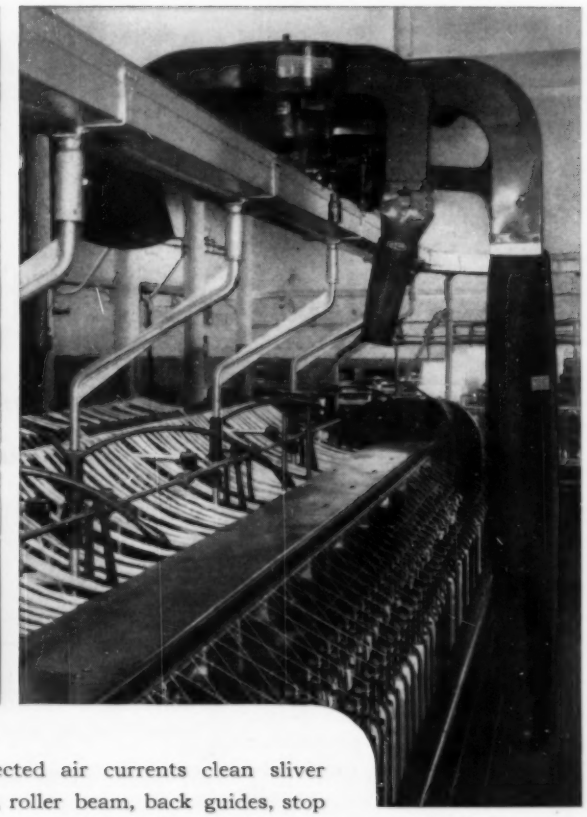
and NOW the *Roving Frame Cleaner!*



Controlled, individually directed air currents clean sliver creel, roll covers, roll stands, roller beam, back guides, stop mechanism, flyers including presser fingers, traversing carriage and underframe.

Room Cleaner may be attached to Frame Cleaner for cleaning ceiling and other overhead surfaces.

401

During doffing and creeling periods air currents are automatically reduced or deflected.

Cleaner greatly lessens flyer chokeups and other lint troubles. Operatives can tend more frames. Production is increased. Quality of roving is improved.

Parks-Cramer Company

Humidifying and Air Conditioning Since 1904
Traveling Cleaner Systems Since 1926

FITCHBURG, MASS. • CHARLOTTE, N.C. • ATLANTA, GA.

DOW

In their brief but exciting history, chelating agents have encountered reactions ranging from scoffs and disbelief to overzealous exaggeration about their application. But the air is clearing. Already they are serving as important tools in many industrial processes. This is the beginning of a series on chelating agents designed to further clarify what they are, what they will do—and won't do.

The Chemistry of Chelation: Part I

Chelation defined · Example of the reaction · Variety of applications · Future of chelating agents

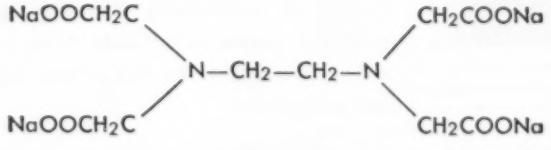
Polymerization of synthetic rubber controlled . . . soap kept white and sparkling on the dealer's shelf . . . textiles bleached and dyed with permanent uniform colors . . . pharmaceuticals stabilized. Unrelated reactions? Certainly. However, all are accomplished by a group of closely related chemicals called chelating agents. How do they work? Well, it's not magic, but chemistry—in a way, fairly basic chemistry. But let's begin at the beginning.

What Is Chelation?

Let's look at the word chelation. It is derived from the Greek word *Kelos* which means "claw." Simply stated, a chelate is a claw which holds a metallic ion inactive in solution. Chemically stated, chelation is a chemical reaction in which polyvalent metallic ions are reacted with organic reagents (chelating agents) to chemically inactivate these polyvalent metallic ions in the form of an extremely stable, water-soluble chelate.

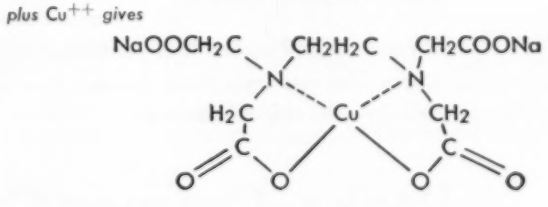
Typical Reaction

If we examine a typical reaction, the process of chelation becomes quite clear. Let us take, for example, the chemical structure of Versene®, one of the Dow chelating agents.



Versene

Now, if we place the Versene in a solution which contains free polyvalent ions of copper (Cu^{++}), the following is the result:



Versene Copper Chelate

The resultant compound is Versene copper chelate. The copper ion has become a member of an inner ring structure in the molecule. The result?

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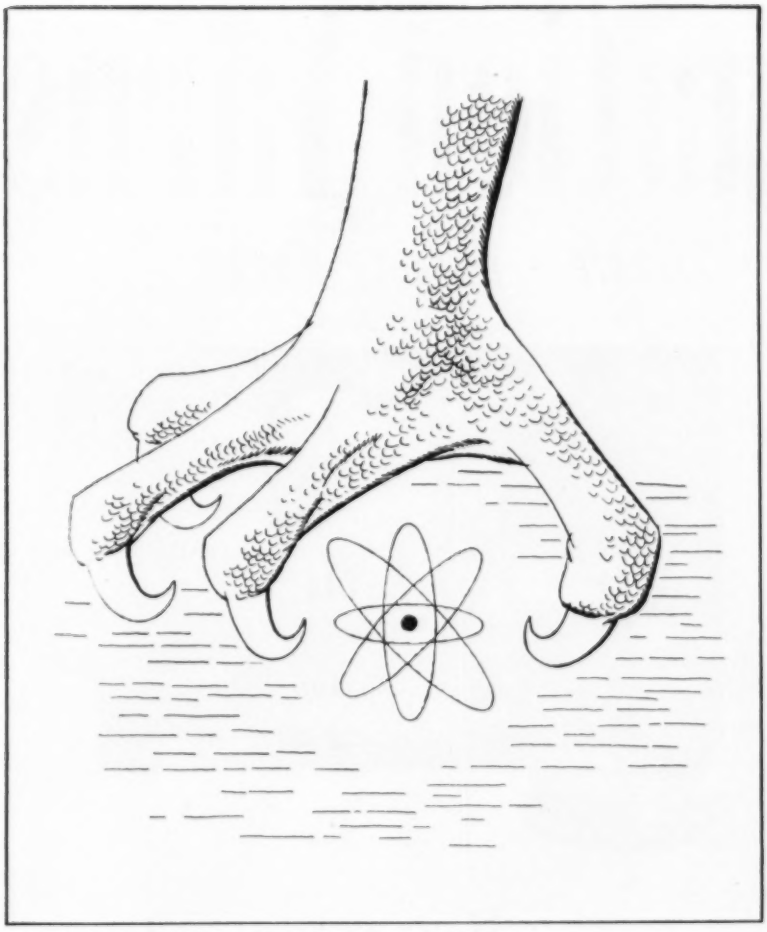

It is inactivated. It cannot react with soap to cause darkening and stain during storage.

It can't cause breakdown of pharmaceuticals. It can't cause any trouble anywhere because it is locked in the Versene claw. It will stay locked in unless it is desired to reverse the process. This reverse action is used in polymerization of synthetic rubber—ions of iron being released at a predetermined rate by the chelate.

Variety of Applications

The most important thing, however, is that this "claw" property of chelating agents such as Versene makes it possible to solve a multitude of processing problems in industry. They've been used in tanning leather and tenderizing peas. They can descale boilers, soften water and cure acute lead poisoning. The number of current industrial and medical applications is large, but the potential in unexplored areas is enormous.

And the Future?

The future of these products will hinge on the imagination and insight of chemists and engineers, of production men and purchasing agents, in nearly every industry. Wherever metal contamination poses a problem or wherever controlled introduction of metal ions is desirable, these chemicals warrant investigation.

Versene and other Dow chelating agents won't solve them all. Chelation is not a panacea. It will work chemically in some areas—it will fail in others. However, it is Dow's intention to assist in every way in the uncovering of processes in which chelating agents can be profitably used. Inquiries on your company letterhead will be handled with dispatch. We will be pleased to provide information and technical assistance. Write to Technical Service and Development, Dept. SC 900K, THE DOW CHEMICAL COMPANY, Midland, Michigan.

The next three topics in this series

PART II May	The Versene and Versenol® series of Dow chelating agents (what they are, strength and stability features—Versenol lower cost, less strength). Also—how chelating agents are specified (product performance versus chemical composition).
PART III July	Specific chelating agents for specific applications. Processing of textiles (strength and stability of Versene 100 for stabilization of hydrogen peroxide in bleaching ranges—Versene 100 strength and stability—Kier boiling; Versene S®, Versene T® for iron in presence of free caustic.
PART IV September	Further discussion of the use of chelating agents in the processing of textiles (production economies possible—weak versus strong chelation depending on process and material—improvement in appearance and durability of fabric).

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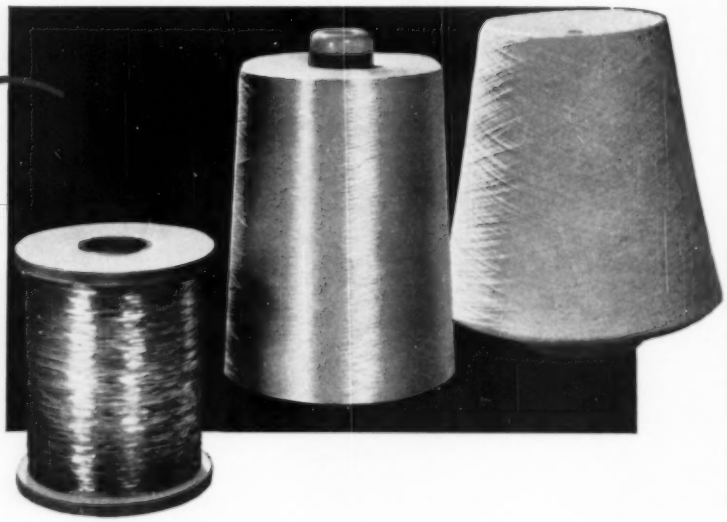
Combination Yarns

Strong • Pliable • Easy-to-Work

Any combination of these metallic, synthetic and natural yarns



Branson Combined Metallic Yarns

Non-tarnishing, highly color-fast and heat resistant metallic yarn combined with natural fibers or synthetic yarns. Wide range of metallic colors and widths.

Branson Combined Synthetic and Natural Yarns

Synthetic yarns such as Dacron, Nylon, Acetates, Acrylics and other man-made fibers combined with natural yarns.

Branson Elastic Yarns

Highest quality elastic yarns for hosiery, weaving and other trades for the past 18 years.

Made to your order

by Branson

Branson Combined Yarns are custom-made to your specifications. These strong, pliable, easy-to-work yarns are expertly manufactured by highly skilled technicians of many years experience and are guaranteed to run smoothly on your machines.

Tell us your requirements... let us work out the details with you.

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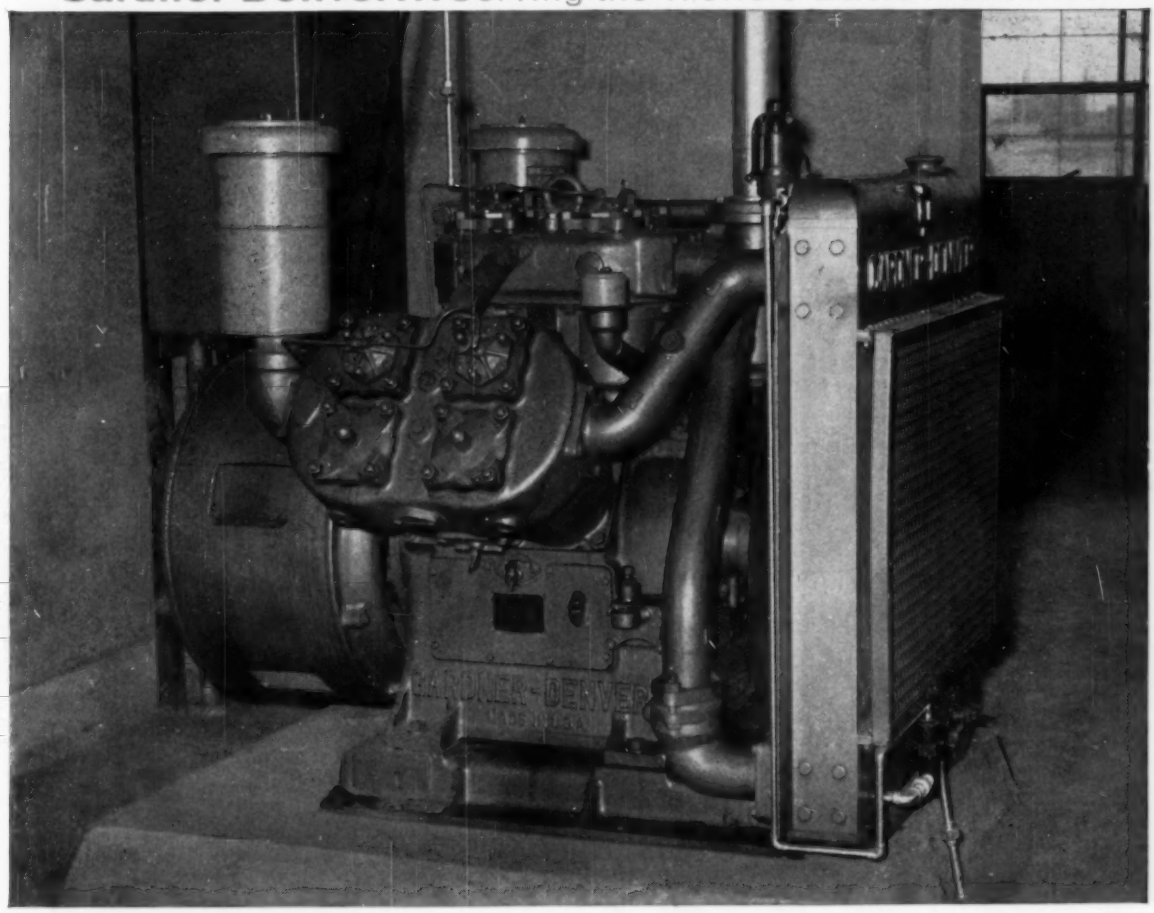
Gardner-Denver... Serving the World's Basic Industries

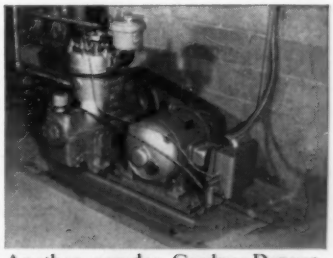


Moves in fast . . . starts right away . . .

Gardner-Denver WB Compressor

It's as easy as it looks in this picture to install a Gardner-Denver WB Compressor. Hook up the wiring . . . air line . . . controls—that's about all there is to it. Not much of a foundation is needed—because vibration has been designed out of the machine. The packaged unit has a built-in motor, and a self-contained radiator-intercooler that solves cooling-water problems.

Available in seven sizes from 142 to 686 cfm. Write for Bulletin WB-10, with full specifications.



Another popular Gardner-Denver compressor—noted for long, steady runs—the model AA. Bulletin AA6.

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THE QUALITY LEADER IN COMPRESSORS, PUMPS, ROCK DRILLS AND AIR TOOLS FOR CONSTRUCTION, MINING, PETROLEUM AND GENERAL INDUSTRY

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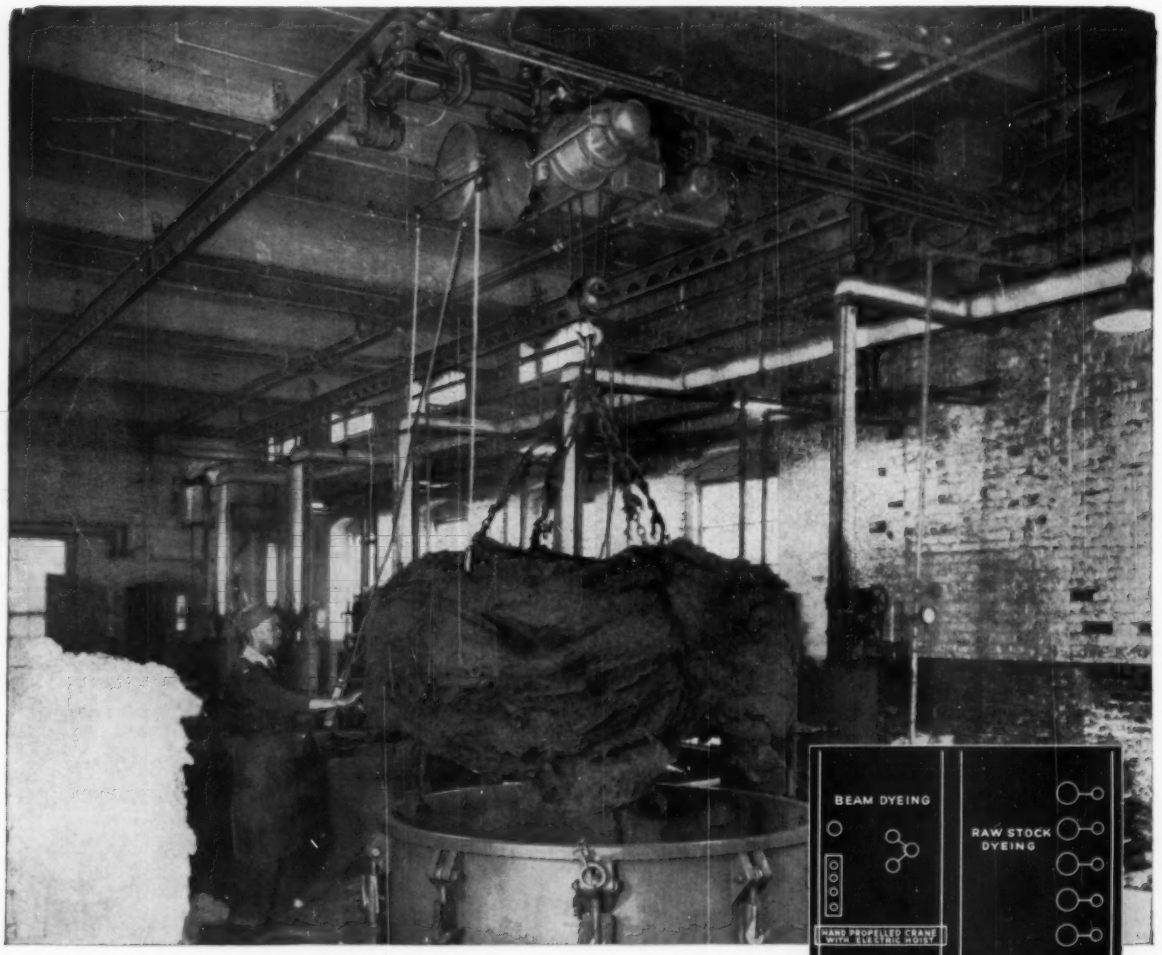

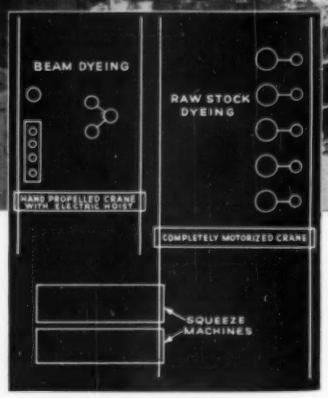

Speeds Denim Raw Stock Dyeing and Handling

In 1939, a three-ton completely motorized Cleveland Tramrail Crane was installed in the Dye Room of a leading North Carolina denim mill. This serves five 1500-pound Chattanooga dyeing machines. It speeds the handling of heavy kier covers and bulky wet cotton charges.

The hard manual work formerly required has been eliminated. Time lost in loading and unloading the dyeing machines is greatly reduced and consequently they can be in dyeing service a greater part of the time.

Because of satisfaction with the first crane, another crane was purchased in 1941 and installed in an adjacent bay to serve a two-kier Gaston County dyeing machine for beam dyeing. This is a hand-propelled crane with electric hoist, that greatly facilitates the handling of beams in and out of the dyeing machines, extractor and dryer.

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BOOKLET No. B-2008. Packed with valuable information. Profusely illustrated. Write for free copy

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
8470 East 287th St. Wickliffe, Ohio

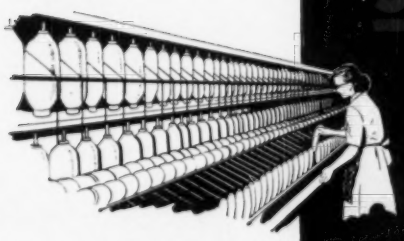
CLEVELAND TRAMRAIL
OVERHEAD MATERIALS HANDLING EQUIPMENT

ARE THESE PATENTED

SEALMASTER *Features!*

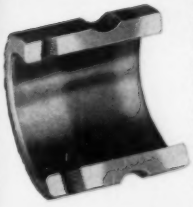
AS FAMILIAR TO YOU... AS THE

PROBLEMS THEY ELIMINATE?



LOCKING PIN AND PERIMETER DIMPLE

prevents rotation of outer bearing race assuring positive lubrication while allowing for several degrees of misalignment in any direction. Misalignment of shaft cannot interfere with effectiveness of seal.



ZONE HARDENING

Provides positive race-to-shaft locking, eliminating shaft wear and reducing fretting corrosion. Inner race ring is thru-hardened in ball path section only — leaving extended portions in original, soft, tough metallurgical state. Hardened set screws tightened through soft extension provide firm bind to shaft.

LABYRINTH SEAL

felt-lined steel flingers rotating in labyrinth prevent entry of dirt and dust and retain proper amount of lubricant for long bearing life.

BALL RETAINER

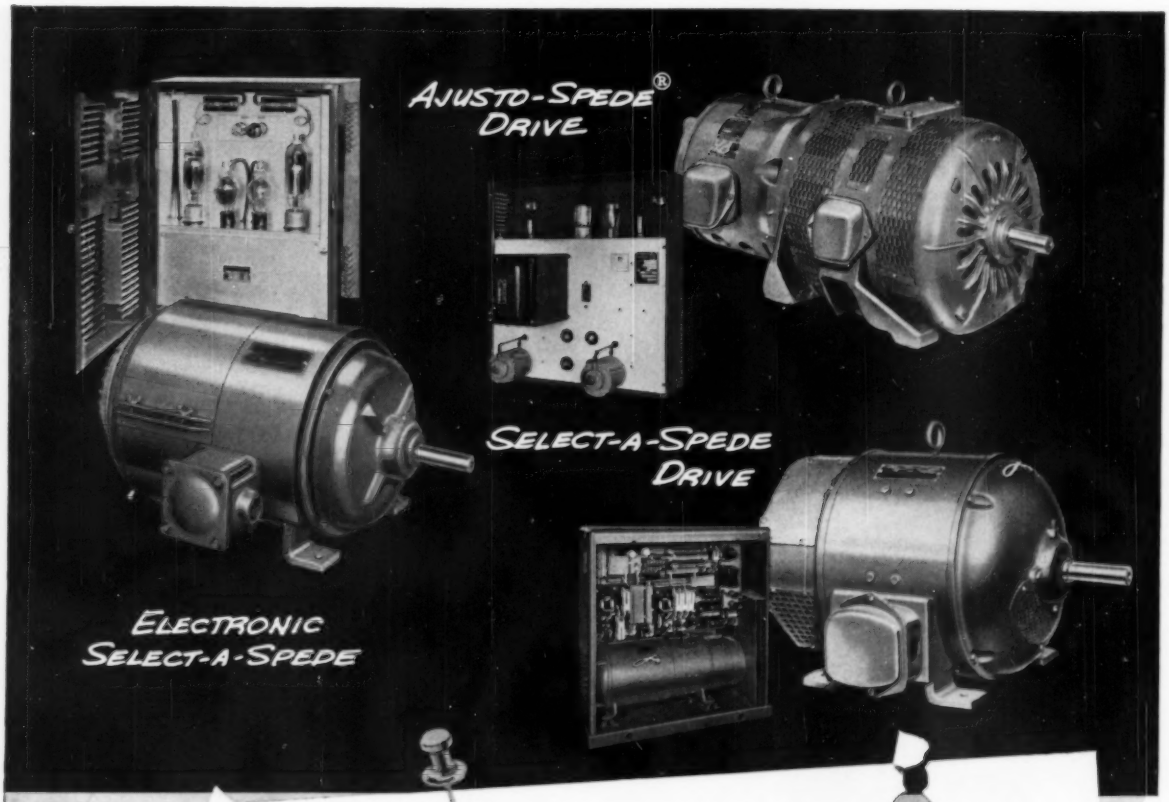
brass ball retainer spaces balls accurately for proper distribution of radial and thrust loads . . . rides on ground inner surface of the outer race ring, eliminating ball wear, trapping grease and preventing "churning" in the bearing.

Write for Bulletin 454 for full information.

SEALMASTER's exclusive combination of engineering features are important to smooth bearing performance. They are important to you and the machinery you manufacture or operate. They are available in a complete line of SEALMASTER standard and special Ball Bearing Units.

SEALMASTER BALL BEARING UNITS

SEALMASTER BEARINGS A DIVISION OF STEPHENS-ADAMSON MFG. CO. • RIDGEWAY AVE., AURORA, ILL



Is your adjustable-speed drive problem different?

. . . then it will pay you to look to Louis Allis for the best solution

There are several reasons why it pays to come to us with your adjustable-speed drive problems.

First of all, we have no axe to grind. We can recommend the proper drive for your needs because we make them all. There's no compromising.

Secondly, when you turn your problem over to us, we tackle the whole job . . . assume the entire responsibility.

And finally, we have more than just drives to offer . . . we have engineering and manufacturing experience. We've already solved a lot of drive problems. That's why we can tell you what you need, no matter what kind of machine you have.

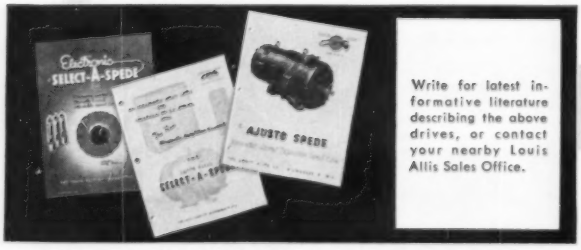
And here are the drives that can do the job for you:

Ajusto-Spede® Drives. 1 to 75 hp. Constant torque with up to 10:1 continuous speed ranges available. Infinitely adjustable eddy current clutch drive.

Select-A-Spede Drives. 1/2 to 400 hp. 8:1 constant torque speed range with magnetic amplifier control. Adjustable speed DC drive motor built in any enclosure.

Electronic and Static Select-A-Spede. 3/4 to 15 HP DC adjustable speed drive motor with speed ranges up to 100·1 and regulation to 1/2%.

See your Louis Allis field engineer or write and tell us about your problems. There's no obligation



Write for latest informative literature describing the above drives, or contact your nearby Louis Allis Sales Office.

ASD-102

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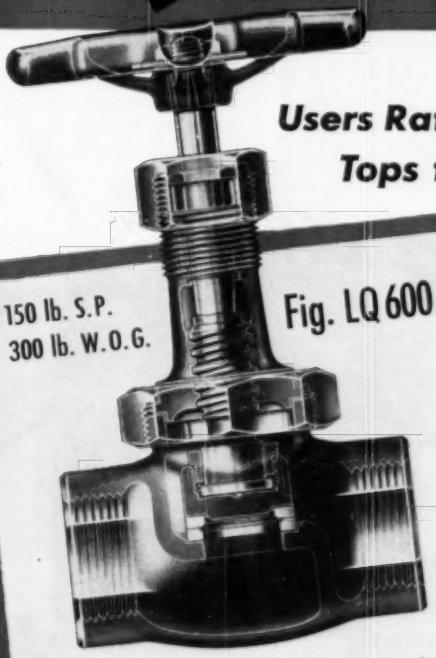
LQ600 STOPS VALVE LEAKS!

Users Rate New Lunkenheimer LQ600 Valve Tops for Maintenance-Free Service



150 lb. S.P.
300 lb. W.O.G.

Fig. LQ600

These are actual case-history reports, typical of the amazing performance records being set by LQ600 Globe valves in severe-service applications everywhere . . .

- "LQ600 has been outstandingly successful on our toughest services. We are going to use LQ600 in all future globe valve replacements and new installations."

- "It begins to look as though 'wire drawn' seats and plugs are obsolete now. We've been on the lookout for a valve like LQ600 for years, so we're suggesting that all our branches get a supply and replace all leakers immediately."

- "Previous valves were lasting only two weeks to two months before the stainless steel seats and discs had to be replaced. Your LQ600 has been holding since May 1, 1953."

- "LQ600 has 'stayed put' on this tough service since 1952, where both plug and composition disc valves gave trouble for years. It's the only valve that ever held on this service."

- "We have a severe 120 lb. steam throttling service, and regular plug valves lasted only about a week before leakage. Not one of your LQ600 Valves has leaked in this service, and we are now using them all over the plant, in all sizes."

IF YOU NEED GLOBE VALVES THAT DO NOT LEAK, AND YOU WANT TO ELIMINATE SEAT AND DISC REPAIRS—

USE LQ600

WRITE FOR CIRCULAR 602 The Lunkenheimer Co., Cincinnati 14, O.

STEEL • IRON • BRONZE • PVC

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Setol Cleanser HAS WHAT IT TAKES TO MACHINE-SCRUB OILY FLOORS—

Faster cleaning action!

Cuts operating time of the scrubbing machine

Because *Setol* is specially compounded for the greater speed of *combination-machine-scrubbing*, it must *and does* work faster than average alkaline cleansers. *Setol* saponifies *and emulsifies* grimy oil and grease *instantaneously*. The wetting agent in *Setol floats the oil* for fast, easy, *and thorough* removal by the vac of a *combination machine* or with a separate vac unit. And because *Setol* stays fast-acting longer—does not spend its strength quickly as do ordinary oil and grease solvents—less is required to clean a given area. Thus *Setol* saves on materials and, by speeding the cleaning process, cuts operating time of the scrubbing machine . . . reduces labor costs . . . and saves on brushes. Best of all, *Setol gets floors oil-free clean!* Also acts as a disinfectant (contains pine oil), and leaves a pleasant, clean aroma.

- **A constant, fast-acting cleanser for machine-scrubbing cement, wood, wood block, metal, stone, and terrazzo floors**
- **Consistent use on cement floors prevents cement dusting . . . provides a finish that helps seal out waste materials**

Finnell 213P Scrubber-Vac

Applies cleanser, scrubs, and picks up — in ONE operation!

For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 1904 East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

FINNELL SYSTEM, INC.

Originators of Power Scrubbing and Polishing Machines

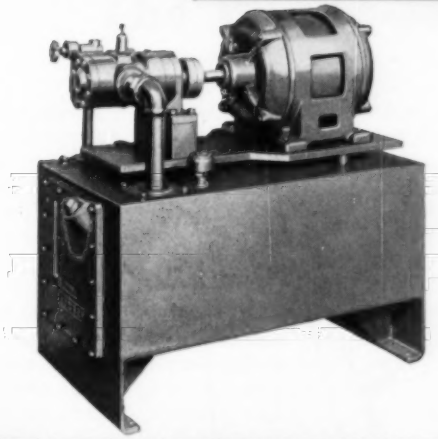
Everything FINNELL for Floor Care

BRANCHES IN ALL PRINCIPAL CITIES

BETTER products FASTER

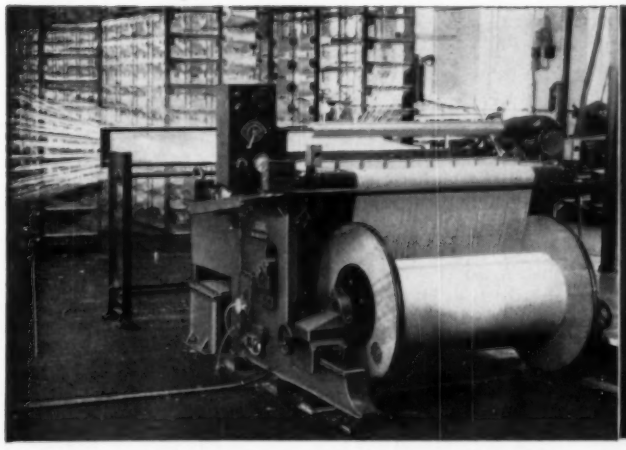
When Your Textile Machinery has

VICKER **Hydraulic Power Units**



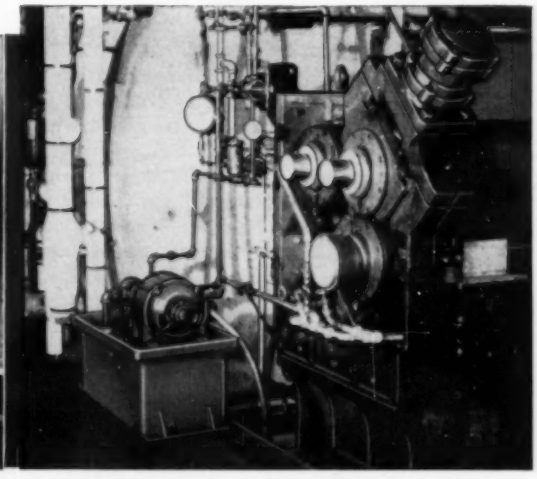
Dependable and practically maintenance-free, Vickers Hydraulic Power Units are a compact self-contained power source for hydraulic systems on a wide variety of textile machinery. They frequently simplify design and save installation costs. Many are standard stock units while others are individually designed for the machines they serve.

Vickers Hydraulics has numerous additional advantages for the user and the builder of textile machinery. Note applications below and then ask our nearest Application Engineering Office for a copy of Textile Bulletin 54-66.



WARPING UNIT

Delivers larger warps of uniform density. Stepless control of beam against press roll prevents scuffing. Vickers Hydraulic System is completely adjustable to meet all conditions. Accommodates beam heads up to 40" diameter.



HIGH TEMPERATURE CONTINUOUS DYEING MACHINE

Provides faster continuous dyeing by dye bath at temperature above atmospheric boiling point in pressure vessel. Cloth passes in and out between rolls that form pressure seal. Nip pressure between rolls is provided and held uniform by Vickers Hydraulics.

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The LONG-RANGE VIEW

The Young-Man Hunting Season

The season for bird-dogging young college men is here. On every college campus in the country, industrial firms are busy as bees competing with each other in trying to lure college graduates onto their payrolls; and many college placement officers are quite gleeful over the "improved prospects" of their graduates.

The whole mess smacks greatly of a game—a vicious bit of "business go-getting" that makes a pawn of the unsuspecting graduate. It is our opinion that these companies and these placement officers are morally guilty of grossly misleading these young men. They are building up a spirit of unrealistic expectation and overcompetitiveness that is bound to bring disappointment and misery to the graduate and financial loss to the company.

Bids by Companies

It is well known that since World War II there have been more jobs seeking graduates than graduates seeking jobs. This year, 5,000 firms are bird-dogging the crop of 350,000 students receiving degrees. Additional firms are trying to recruit the graduates by indirect means rather than by sending out recruiting teams.

It is estimated that there are at least two jobs for every graduate. In some fields, there are 12 to 15 jobs available for each man. A survey of 168 companies showed that demand for students is 29.9% greater this year than last year, and average starting salaries for all fields is up from last year's $349 a month to $366.

Recruiting techniques go beyond the usual "selling" pitch to include red-carpeted visits to plants and headquarters and in some extreme cases plush "lost-weekend" vacation trips with all expenses paid.

Colleges Take Part

While perhaps disapproving of some of the techniques used by firms, most colleges are obviously delighted at this display of demand for their "product." Colleges have their own recruiting problems. One of the best ways of all for them to attract high-school graduates is to be able to show high job demand and salaries for their graduates.

We do not want to imply that colleges should not try to increase the size of their student bodies or that they are engaging in questionable recruiting techniques. We are sure that their practices are on an infinitely higher plane than those of many of the recruiting industrial firms.

We do think, however, that colleges should spend a great deal more effort in preparing students for the harsh facts of business life that lie beyond the heyday of recruitment. They could do a great deal toward soft-pedaling the overcompetitiveness and exaggerated expectations being built up in students.

Consideration Is Needed

The best panacea of all would be to work out on a national basis some means by which college enrollment and the number of college graduates could be doubled or trebled at once. The great trouble now is that the demand for young men starting in industry is far too great for both the supply available and also for the existing opportunities for advancement. Much of the recruitment now done is merely to guarantee having young men on tap in case they are needed. An ample supply of graduates would go far toward reducing the demand to a level more consistent with later opportunities.

Lacking such an arrangement, schools and industrial firms should give a little more consideration to the young man with whose life they are playing. He should not be treated as only a recruitment statistic. He should not be led to believe that the business world is just waiting for him. He should not be led to expect that he will be top man, or very nearly so, week after next.

Those things simply are not true, and every mature person knows it. Schools and recruiting industrial firms should take a look at the young men they're using as pawns and do a little soul-searching. There is such a thing as paying too high a long-range price for short-range success.

O. M. Thomas

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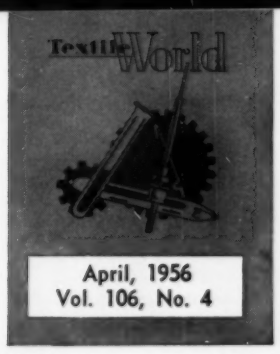


Leadership Needed In TEXTILE MARKETING

- **The textile industry can make goods better than it can sell them. While other products, automobiles for example, get more and more of the consumer's dollar, textiles get less and less because of ineffective sales methods.**
- **Here are three conditions mills could take advantage of to develop marketing leadership.**

By ARTHUR P. FELTON,* Bruce Payne & Associates

A TREMENDOUS NUMBER of companies are experiencing marketing difficulties these days. The prospect is that business will have even more marketing troubles next year, and still more five or ten years from now. Technological progress is still outstripping marketing progress, and the peculiar nature of technological progress today is making the marketing job harder.

It is true that marketing is not standing still. Companies are experimenting with new methods and techniques such as motivation research, better sales training, and various kinds of market audits. However, none of these things offers anything in the way of basic solution to the marketing problem. Although they might prove useful once other steps are taken, none of them would relieve the real difficulties companies are getting into today.

What Makes Leadership

Judging by the experience of a wide range of companies with all sorts of marketing problems, there are three essential conditions of marketing leadership:

1. Top management must recognize that the nature of the marketing problem is fundamentally different from the nature of the production problem. This fact has vital implications for (a) executive selection, (b) marketing strategy, and (c) sales organization. Failure to account for the differences has got countless companies into serious trouble.

2. Management must recognize the dynamic quality of the marketing problem—the constant change taking place not only in the market but also in channels to the market. The change is so continuous and so widespread that it makes every sales plan in the country out of date to some extent. Failure to grasp this point, perhaps more than anything else, has kept companies from getting out of sales trouble when they might otherwise have succeeded.

3. The crying need in marketing management today is the ability to see the enterprise as a whole and to understand how the various functions of the company and its sales organization depend on one another. The specialists who devise techniques and conduct studies have been going to town, but the general managers have not. The tendency has been to think in terms of formulas such as "working back from the market" or in terms of a particular group such as the distributors, rather than to consider all parts of the marketing problem in relation to each other and to the rest of the company.

What Causes Trouble

How do companies get into marketing difficulties?

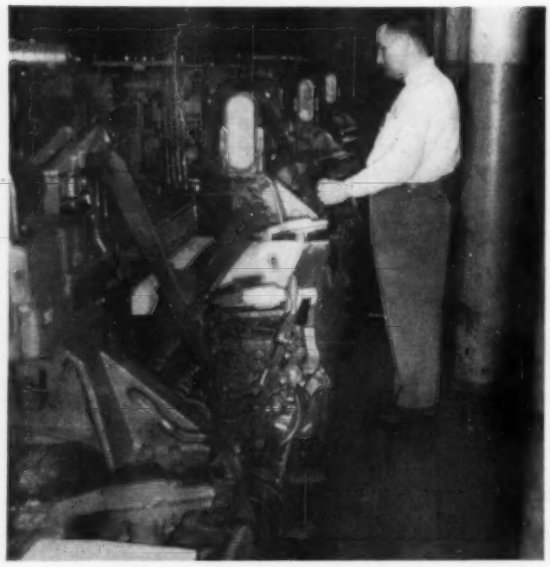
One major cause is the failure to recognize that marketing calls for a different executive temperament than does production. A factory-trained executive usually follows a logical line of reasoning that works best in factual situations. By contrast, sales executives must often think with only intangibles as a guide. The rules that work in selling are just not the same, in essence or in spirit, as the rules that work in other business areas.

When management fails to recognize the important differences between marketing and production, trouble develops along a few well-worn paths. Some of the symptoms are:

1. **Fenced-in designers.** There may be a tendency to believe that a couple of smart people can design products and packages in a sheltered laboratory, run as a wing of

CONTINUED ON PAGE 182

*Condensed from a manuscript published under the title "Conditions of Marketing Leadership" in March-April Harvard Business Review.



UNIFIL is operating in this alley on dope-dyed, filament-rayon, spun-rayon, and cotton filling.

ONLY 14 BOBBINS, held by Ponemah's Weaving Overseer Alexander Walmsley, are needed in a loom.

Ponemah Mills Installs 500 UNIFIL LOOM WINDERS

• One of the first installations of mill-bought Unifil loom winders is now in operation at Ponemah Mills, Taftville, Conn. Ten units are already in operation. Ponemah President Henry A. Truslow says: "The units are operating very satisfactorily with no reports of mechanical trouble."

By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD

The first 10 Unifil loom winders of 500 ordered are now operating on Draper XD looms at Ponemah Mills, Taftville, Conn. This Ponemah installation is one of the first mill-bought production installations of Unifil, a new system of filling winding developed by Universal Winding Co., that winds filling yarn on bobbins right at the loom.

Ponemah President Henry A. Truslow has this to say about the Unifil units: "Our decision to purchase the 500 units was made only after careful study, and we think they will be a real benefit to us in the future. They were bought as a result of the studies made by Universal and Barnes Textile Associates, Inc., at a mill weaving filament-rayon fabrics equipped with 45 Unifil units. Based on these studies, the 500 Unifil units will pay for themselves in four years.

"The Unifil units now in production are operating very satisfactorily with no reports of mechanical trouble.

Filling Bands Are Reduced

"One great improvement on fabrics woven with the unit on both dope-dyed warp and filling yarn is that no filling bands are visible, and this fabric is a critical one for filling bands. Because all filling in a given roll of cloth comes from the same cone of yarn, filling shades are more uniform.

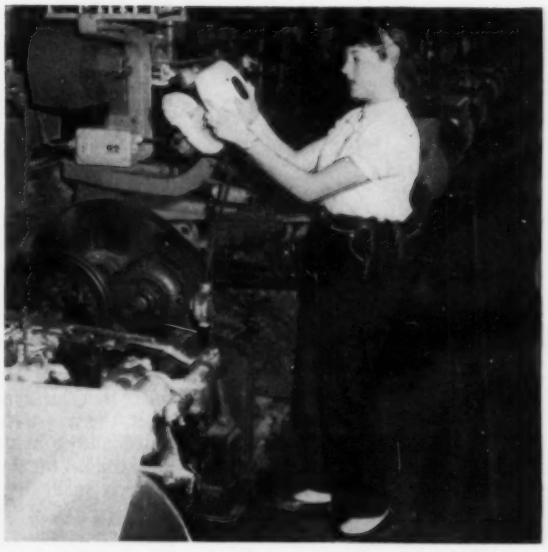
"All filling in any given roll of fabric is wound on the same winding unit and is therefore wound under the same tension conditions. As a result, filling bands, slack picks, tight picks, and broken filling are reduced. Mixed filling is also eliminated."

The first units at Ponemah are running on a wide variety of fillings: 150-den. dope-dyed yarn, 150-den. Cupione, and other filament-rayon yarn from cones; 60s spun-rayon yarn and cotton yarn from Barber-Colman cheeses.

The 10 looms equipped with Unifil are 50 ins. wide and run at 172 ppm., the same speed of all 50-in. XD looms at Ponemah. The bobbin length on Unifil and on all XD looms is 7⅞ ins.

The wound bobbins are 1 in. in diameter and are wound with a No. 7

WEAVER tends Unifil units as part of her job. Vicy Chaffin makes a visual check.



CREELING of units is done by a creeling hand. Pauline Bonin replaces a Barber-Colman cheese.

wind. The traverse is 1¾ ins. The speed of the bobbin being wound is 5,000 rpm.

Plans for Operating Unifil

Although operating plans for the entire 500 Unifil units may have to be modified, Ponemah expects to follow the suggestions of Universal. Loomfixers will fix all parts of the units from the loom lays down. This part of Unifil includes the bobbin-stripping mechanism and the magazine.

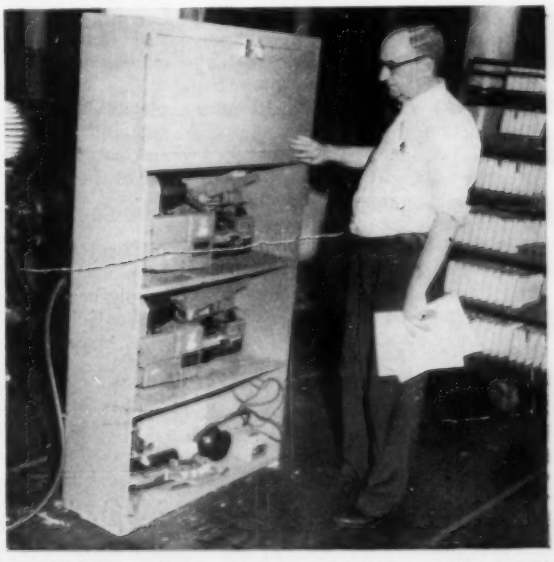
The winding unit itself will be maintained by a former loomfixer who is receiving training at Universal's plant in Providence. In addition, the loomfixer is being given other training by a Universal serviceman in the weave room at Ponemah.

The Unifil fixer will maintain all 500 units. Since only 2 mins. are required to remove and replace a winding unit, little work will be done on the units at the loom. Instead, a unit will be replaced with a spare if trouble develops and the removed unit will be repaired without loss of production.

The units were installed at Ponemah by a two-man team. Three looms were equipped during an 8-hr. shift and were put back in production as soon as each unit was installed.

Weavers tend the winder; but since the winder is fully automatic, little weavers' time is required. Creeling is done by a creeling hand, who patrols the back alleys of the looms.

UNIFIL FIXER checks a unit at the loom. When major trouble occurs, he removes the unit.



SPARE UNITS are kept in a cabinet near the looms. Second Hand William Wiggins inspects them.

The Unifil Loom Winder

How the UNIFIL Mechanism Fits on Standard Looms

- What Unifil is
- How it works
- How it is installed on a loom

UNIFIL (a trade name) is a new method of filling preparation developed by Universal Winding Co., Providence, R. I. It is a winding mechanism that becomes part of a single-shuttle loom. At present, installations are limited to Draper XD and X-2 looms. The mechanism is completely automatic and in normal operation requires only the creeling in of cones or other filling-yarn supply.

All the following operations are performed automatically by the unit:

1. Filling is wound on empty bobbins.
2. The wound filling is transferred into the shuttle in the loom.
3. Bunches of filling are stripped from the exhausted bobbins transferred from the loom.
4. Empty bobbins are returned to the winder.

Unifil was shown at the American Textile Machinery Exhibition in Atlantic City in 1950, but initial research on the winder began in 1947. Mill tests have been made at Hathaway Mfg. Co., Bates Mfg. Co., and Chicopee Mfg. Co.; and field tests are being continued at four mills. In addition to the 500 Unifil units purchased by Ponemah Mills, Amerotron Corp. has ordered 500 units and has 10 units in production at present.

Unifil is designed to run 10 to 15% faster than filling is used by the loom. When the loom magazine is filled, the winder stands by. Only 14 bobbins are used: 6 for the full-bobbin magazine, 4 for the empty-bobbin magazine, 2 for the stripper, and 1 each for the winder and shuttle.

Installation Is Easy

To equip a loom with Unifil, the original rotary battery is removed and the unit is placed right on the present hopper-stand base, where it is held with the two original battery bolts. The bobbin-stripper mechanism is placed where the empty-bobbin box was previously located.

All other parts of Unifil are mounted so that they come within the limits of the loom floor area.

The present Midget feeler and complete transferrer motion are used. However, the transferrer-fork stud is lengthened and a nylon transferrer fork is substituted for the standard one. This part is made by Draper Corp. The transferrer shaft is lengthened to support guide pulleys for an empty-bobbin conveyor belt.

The transfer, so far as the loom proper is concerned, occurs in the same manner as with the conventional circular battery even though the new battery is a vertical magazine. Each cleaned quill is picked up by a permanent magnet that acts on the rings at the base of the quill. The magnet is fastened to a conveyor belt and delivers each quill to the empty-bobbin magazine. The conveyor and stripper are driven from the loom drive-gear shaft.

Bobbins are modified by adding small cleats so that the filling end is caught and positioned properly at the beginning of the winding of each new bobbin. No tail is left on the wound bobbin; so the possibility of long tails that must be removed manually is eliminated.

The winding unit itself is completely enclosed in a housing that seals out lint. The gears of the unit are bathed in oil. A ⅓-hp. motor drives the winder.

Two Supply Packages Used

The Unifil mechanism begins at a supply creel with holders for two supply packages, which can be cones, Barber-Colman cheeses, tubes, or pirns. The two packages are tied together for long running time.

The yarn is taken from the package, run up through a wire bail to a multiple-disk tension, and then run under a breakage lever to a thread-guide eye. The disk tension is suspended by four springs to eliminate vibration from the loom. Consequently yarn tension at the wound bobbin is uniform.

To begin the winding cycle, empty bobbins are taken from a conveyor. An empty bobbin approaches the top of the conveyor cycle and contacts a bobbin-release clip, which removes it from the magnetic lifter of the conveyor and deposits it in the empty-bobbin magazine tray. From this tray, the empty bobbin is positioned for delivery to the winding spindle.

To move the empty bobbin from the empty-bobbin magazine to the winding position, bobbin-grip arms move forward and down. The bobbin is clamped and guided into the winding position.

When the grip arms have reached their lowest position, the bobbin support (tailstock) moves toward the spindle to engage the bobbin between the bobbin support and the bobbin driver. The grip arms are then retracted to permit the empty bobbin to revolve.

Then the clutch is engaged, and the bunch begins to build. The length of the bunch in yards is set by adjusting the bunch-guide reset collar to any length of bunch required. This setting is made by hand from outside the housing of the winding unit. The width of the bunch is controlled by a knurled wheel.

After the bunch has been built, the bunch builder is released by the bunch-guide reset collar.

Settings Are Made Fast

The build of the bobbin is made by a 1¾-in. traverse and employs either 5, 7, or 10 winds. Winds are changed by changing gears in the housing. A setscrew inside the housing is adjusted to set the diameter of the wound bobbin. The standard speed of the bobbin being wound is 5,000 rpm., but a speed of 7,500 rpm. is possible if loom speed or cloth width ever require it.

When the bobbin is filled with yarn, the traverse-bar thread guide moves against the sizing-rod trip lever; and in activating this lever, the thread guide is lifted out of engagement with the traverse bar. Then the following action takes place:

1. The eccentric on the camshaft releases the bobbin support.

2. The clutch is released, and the spindle is stopped with a braking action applied by the bobbin driver against the bunch-builder bracket.

3. The traverse cam, which is driven from the spindle through a chain of gears, also stops.

4. By the action of the sizing rod being tripped, the cycle-pin clutch-wedge control latch is released; and if the full-bobbin magazine is completely filled with filling, the cycle of the winder is stopped by an interlock mechanism and no action takes place. In such instances, the winder resumes operation at the completion of the next loom transfer. However, if the full-bobbin magazine is only partially full, the winder cycle starts again immediately when a bobbin is filled in the spindle.

5. The cycle cam, which is now in operation, causes the bobbin support to retract enough to allow the full bobbin to drop out of the winding position onto the rest plate of the full-bobbin magazine.

6. The upper and lower grips advance from each side and clamp, cut, and retain the yarn that runs from the full bobbin on the rest plate back through the thread guide and tension disks to the supply package.

Winding Cycle Repeats

The lower grip and shear assembly, with the end from the full bobbin, continues to travel outward and deposits the end on the yarn-tensioning drum. The end is clamped on the drum, released by the lower grip-and-shear assembly, and held in place until the drum tooth transfers it to the outer surface of the rotating drum. The end traverses down the drum to coincide with the full-bobbin magazine.

The upper grip meanwhile carries the supply end of the yarn inward to a position in line with the cleats of the empty bobbin, which has moved into the winding position. During this operation, the thread guide is retrieved by the upper grip carrier and is moved to the bunch-building position. The bunch builder is then cocked, and the bobbin is started. As the bobbin begins to revolve, the yarn is engaged in cleats and the end is pulled from the upper grip. The upper and lower grips return to their normal positions, and the cycle is completed.

All these operations have been outlined as a sequence, but many of the operations are performed simultaneously.

When the loom feeler indicates that the bobbin in the shuttle is ready to

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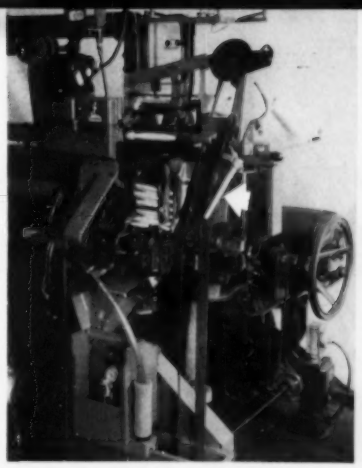
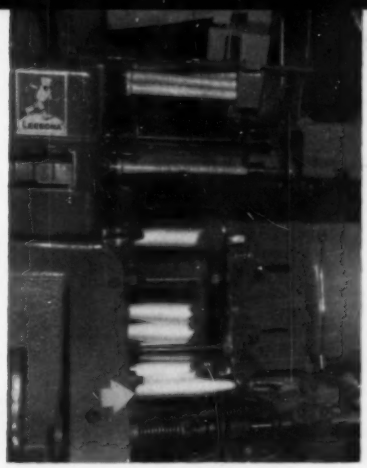
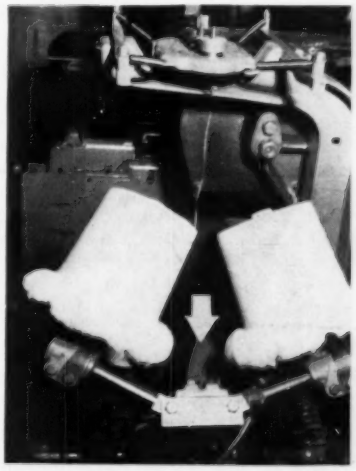


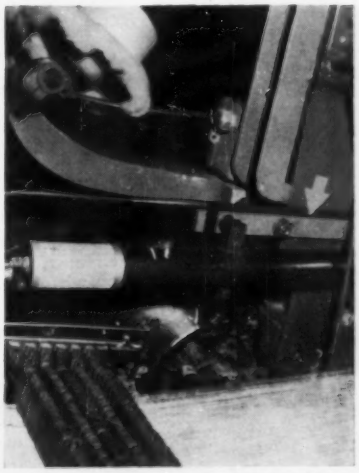
EMPTY BOBBIN (arrow) on the conveyor is being carried to an empty-bobbin magazine, where it will be fed to the winder. The conveyor is driven by a belt and shaft connected to the loom crankshaft.



BOBBIN TRANSFER is made with the bobbin (arrow) in this position. Another bobbin is being dropped to the full-bobbin magazine to fill it to its capacity of six bobbins. An empty bobbin is just starting.

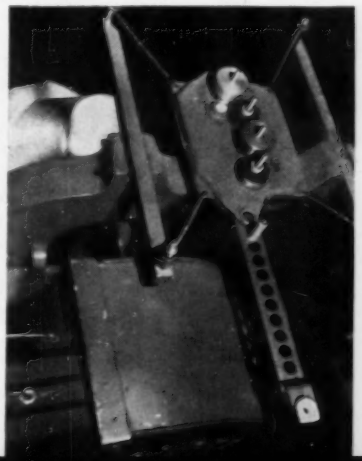


FILLING PACKAGES can be cones, Barber-Colman cheeses, tubes, or pirns. The package holder tilts backward so that the creeler can easily put up a new filling supply and connect the tails (arrow).

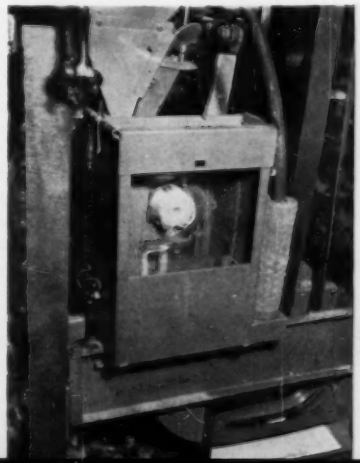


SUCTION CLEARER (arrow) for loose ends at the transfer and for empty-bobbin waste removal begins at the loomside on the motor end of the loom. The piston for the vacuum cylinder is driven by the loom lay.

TENSION is applied by multiple disks located at the highest point of the loom. The tension unit is held in position by four springs that eliminate vibration. The tension is always uniform.



BOBBIN STRIPPING is performed in the cabinet with the transparent front. Bristles in a revolving brush pick up the trailing end as the bobbin is ejected from the shuttle and transfer it to a waste drum to be unwound.



The Unifil Loom Winder

What the Barnes Study Shows About UNIFIL OPERATION

- Tending Unifil requires 9.1% of weaver's time
- Transfer breaks at transfer are 10 to 15% lower
- Unifil failures require 6% of fixer's time.

A COMPLETE SURVEY of a test installation of 45 Unifil units at Chicopee Mfg. Co., Manchester, N. H., was made by Barnes Textile Associates, Inc., in June, 1955. The test units were on Draper XD looms weaving filament-rayon lining fabrics.

During the survey, the Barnes company also made a comparative study of 22 adjoining XD looms with conventional rotary batteries weaving identical lining fabrics. All fabrics were woven from 150-den. filament-rayon filling.

The total 67 looms represented a standard jobload for a weaver. The study was made after the Unifil units settled down to a normal level following their installation.

Two surveys were made, and each survey produced almost identical results. In addition, a series of operating studies (frequency checks) were made.

The first survey consisted of a time-study of the weaver assigned to the test looms and ran for three 8-hr. shifts (full shifts). The frequency checks brought the total time to 40 hrs. of observation on the test section. The objective of the survey was to obtain first-hand records of existing operating conditions of Unifil so that they could be compared with the figures compiled for conventionally equipped winding and weaving.

During the first series of studies, the stops per weaver hour on the Unifil-equipped looms were 14.9 against 18.9 on battery-equipped looms.

Unifil Requires Little Time

A summary of weavers' time utilization for the initial 24 hours' operation shows: (1) the time consumed on looms equipped with Unifil amounted to 0.317 mins. per loom hour, and (2) the time consumed on regular looms totaled 0.399 mins. per loom hour. The 67-loom assignment required only 66.1% active time utilization for the weavers observed.

Unifil tending requires 0.058 mins. per loom hour. This figure has been calculated to be 9.1% of weavers' total duties. The effect of this on a hypothetical 85% task assignment of 80 looms to the weaver is to reduce the assignment to 73.33 looms. This assignment, of course, assumes no reduction in loom stops due to Unifil.

A summary of over-all labor costs for weavers compiled in a table shows that this reduction in looms per weaver increases the direct-labor weaving costs $0.00154 per loom hour.

An analysis of the final study shows malfunctions in only 3.4% of bobbins handled by Unifil. The total bobbins handled by the units is based on an average of 6.8 bobbins per loom hour at 100% efficiency.

However, Universal points out that if the loom set is patrolled properly, malfunctions cannot affect loom operation. The only way the loom can be affected is by a failure of the end clamp (negligible) or by a dropped end not being picked up by a weaver before the bobbin is transferred to the shuttle.

Loom stops from mechanical faults averaged slightly higher on regular looms than on Unifil looms. But like filling stops, the mechanical stops varied at different times.

Transfer Breaks Are Fewer

In both studies, the effect of Unifil on working elements, starting filling stops and front patrol, is negligible, since in neither case has it amounted to more than 2% of a weaver's time.

The frequency of warp stoppage is not influenced by Unifil.

The filling-stop frequency per loom hour averaged for all tests was 0.104 on Unifil-equipped looms and 0.119, or 14% higher, on regular looms. This figure indicates that Unifil benefits filling stoppage and the related efficiency.

However, single tests point out that these frequencies are variable. Filling stops during the initial study series average 0.086 per loom hour on the 45 looms equipped with Unifil and 0.116 (35% higher) on the 22 regular looms. During the second study series, filling stops averaged 0.134 on Unifil-equipped looms and 0.123 (8% lower) on regular looms.

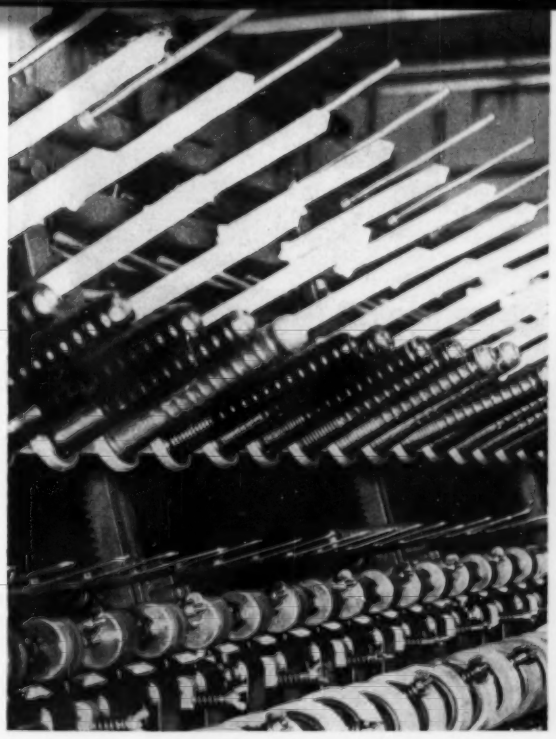
But possibly more important, filling breaks at the transfer were 10 to 15% lower on looms equipped with Unifil and the transfer breaks were 35% of the total filling stops.

Unifil-fixing requirements are somewhat harder to specify. The size of the Unifil installation, 45 looms, and the infrequency of mechanical difficulties made the figures compiled in the studies impractical to use to determine jobloads. Another factor that influenced jobloads was that Universal engineers acted as special fixers on each shift.

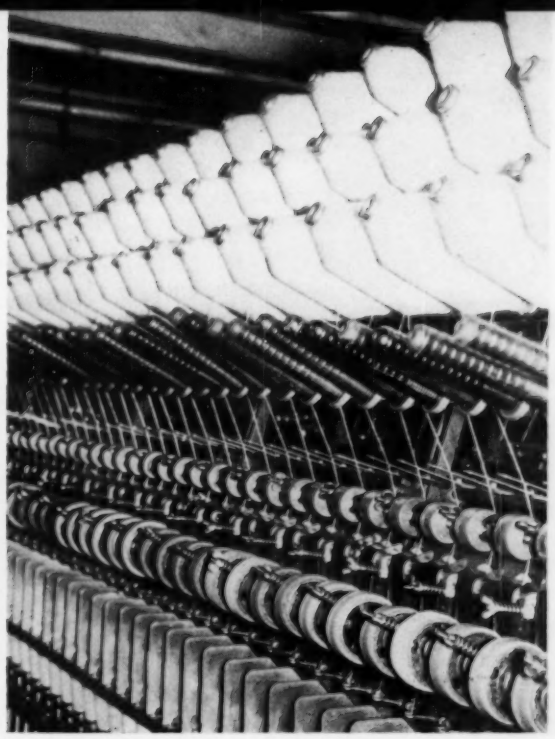
However, a detailed record of Unifil fixing jobs covering the special fixers for 5,760 loom hours of Unifil operation was kept. These jobs involved repairing 25 different failures, but two of the failures were weaving tending duties.

A summary table taken from actual failures indicates that a Unifil-equipped loom requires 2.1477 working minutes for a fixer every 40 hrs. This calculated time, applied to the available time of a loomfixer assigned to 67 looms, requires 6% of the fixer's total time. A standard-size section at the Chicopee mill where the studies were made is 67 looms.

In establishing a cost for Unifil creeling, a theoretical task calculation was projected on the basis of the data developed from timestudies of similar creeling activities. At a standard rate of 108 cones creeled per hour, a creeling operator has less than a full job on a 500-loom section with a standard cone weight of 4.48 lbs. But under normal conditions, this factor would be compensated for in the labor-cost distribution.



LIVE CREEL SPINDLES were installed on a woolen spinning frame that was converted to the long-draft system. Installation was quick and cheap.



ROVING on large packages now turns freely. To keep the spindles from overrunning, 5/16-in. wedges were placed under the creel rails to tilt the spindles.

CREEL SPINDLES Solve Worsted Spinner's Problem

When Spinners Ltd. changed to long-draft spinning it decided to adopt creel spindles that were free to rotate to ease roving pull-off. Besides low cost and ease of installing, the spindles give—

- **Good lighting at the right place**
- **Easy threading of roving**
- **More storage space**

By FRED ANDERSON, Spinners Ltd.

THE FINAL STEPS in a change-over to the American system of spinning at Spinners Ltd., Huntingdon, Que., included installing Whitin Quik-Set rovers to replace obsolete ring rovers and the conversion of B. W. spinning frames to long-draft frames.

Rather than tackle the creel problem with an umbrella creel, we decided to use live (rotating) creel spindles. These spindles are doing an excellent job at about half the cost of an umbrella creel without the disadvantages of the latter.

Although the umbrella creel is the accepted holder for packages produced on long-draft rovers where conical bobbins of soft-twisted roving must be unwound without friction, it has four disadvantages: (1) high initial cost, (2) reduced illumination at the draft zone and the thread board, (3) more-complex method of threading, and (4) reduction of spare-roving storage on the frame.

Closely spaced fluorescent lamps run across our spinning frames at ceiling level. Good lighting at the draft zone is essential on colored work, and relocating lights would have been an expensive job.

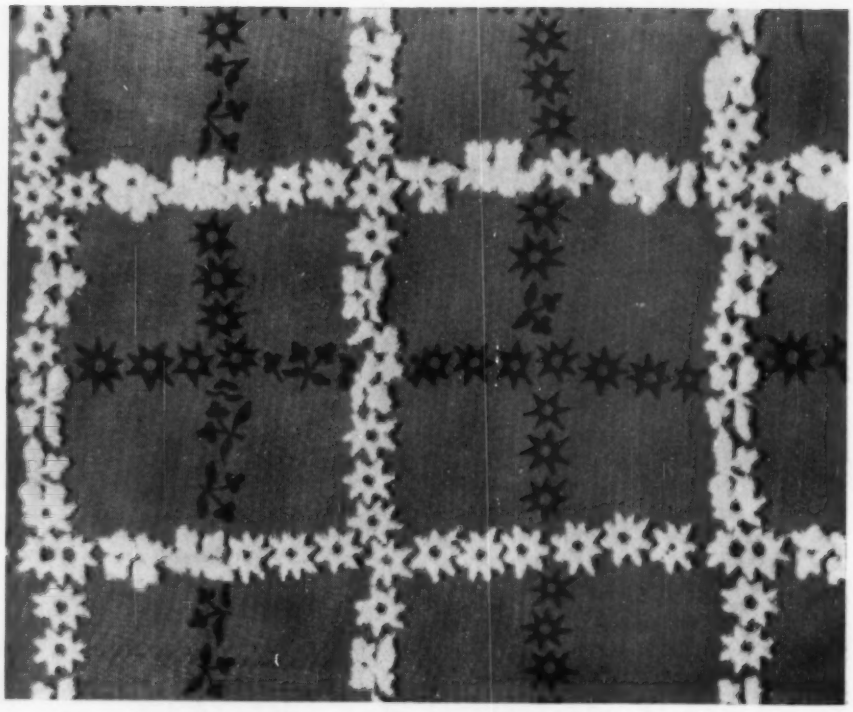
Live Spindles Do the Job

We decided to rebuild our creels with live creel spindles to overcome these disadvantages. The spindles, made especially for the job by McDonald and Son, Inc., have molded-nylon bearings to overcome the drag problem.

The installation of the new spindles was simple. The old spindle was removed from the creel-spindle rail, and the live spindle was put in its place and locked in position with a nut and locking washer.

The spindles tended to overrun slightly when they were placed 90° to the roll stand, especially at the Pneumafil-box end where there is some creel vibration. We tilted the spindles to throw more load on the bottom bearing and give the right drag. To tilt the spindles upwards, 5/16-in. wedges were placed under the lower edge of each creel rail.

The rovings now pass over one guide bar placed just behind the doffing pegs.



WHITE FLOCK AND COLORED LACQUER have been applied in two runs with the same stencil to create the effect shown here.

How Textile Processes, Inc., Applies FLOCK and LACQUER

• Textile Processes, Inc., in Paterson, N. J., specializes in flock and lacquer printing on tricots, marquisettes, and sheers. Acetate, nylon, and cotton fabrics make up the line. By combining engraved rolls and stencils, the company gets a variety of effects in up to three colors.

By **ROBERT W. PINAULT,** Assistant Editor, TEXTILE WORLD

FLOCK PRINTING and lacquer printing are specialized arts that are combined at Textile Processes, Inc., to produce a variety of effects on a number of fabrics.

The basic principle employed is the application of colored lacquer, lacquer plus pigments, or flock adhesive through the perforations of a thin copper cylinder. However, to get one or two more colors in the finished goods, engraved print rollers may be placed in the machine.

Fabrics that come to the plant for flocking or lacquer printing have already been dyed and finished. There are no wet processes involved in flock or lacquer work; so fabric intended for this processing is expected to be correct in shade, hand, and width when received.

Textile Processes makes its own stencils from copper sheets 65x45 ins. in size. A special jig holds a die that carries a small section of the over-all pattern. The copper is positioned very carefully in the jig, and the die punches the pattern through the copper.

The plate is repositioned after each stroke of the die until the required area is completely covered with the pattern. Designs may be fairly intricate but are limited to some extent by strength requirements of the finished stencil.

When the punching operation is completed, the sheet is cut off to a

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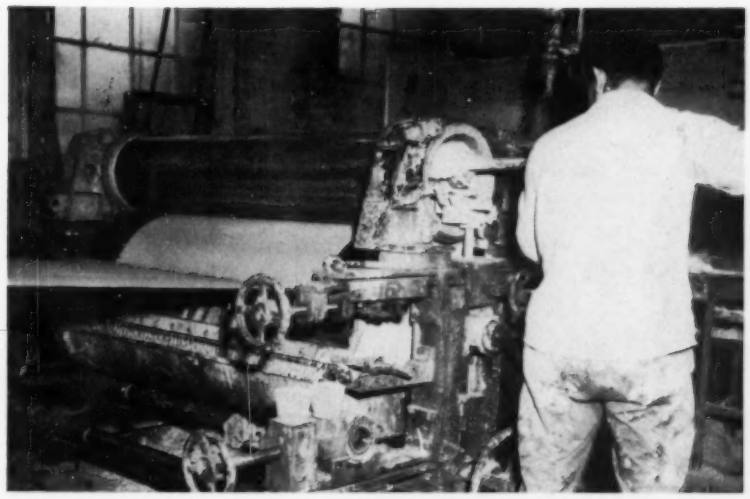
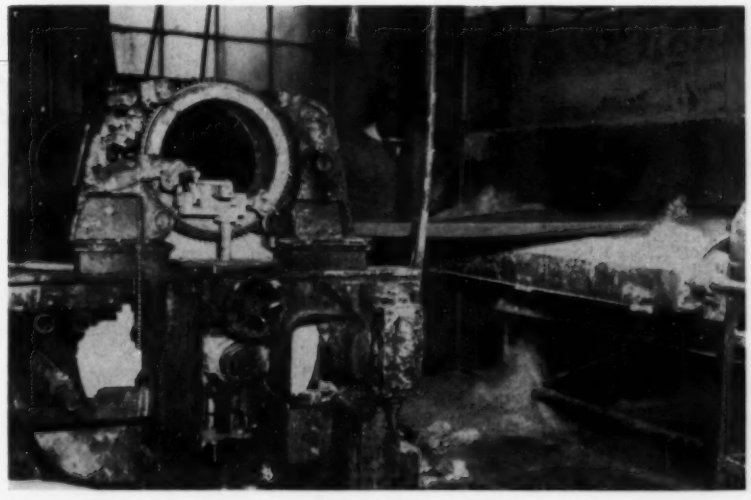
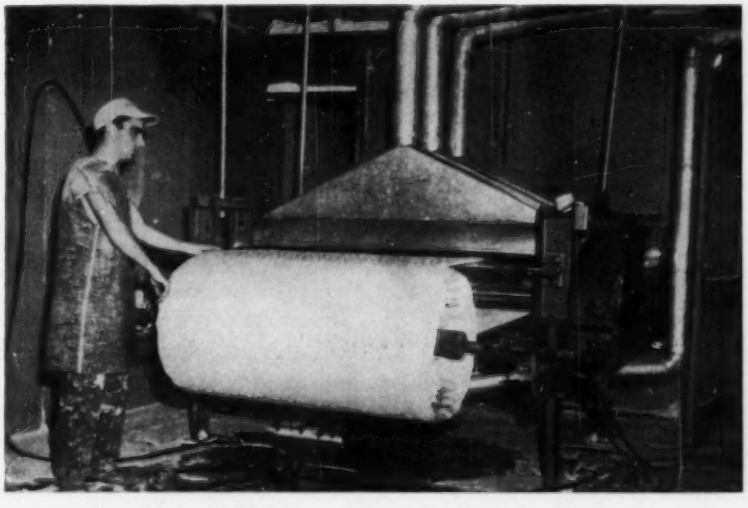


LACQUER AND PIGMENTS are fed to the trough inside the stenciled copper roll with a long-handled scoop.



CLOTH passes from the printing machine directly into the flocking machine. Vibration orients the flock, which attaches itself to the tacky areas stenciled on the cloth.



FINAL CLEANUP of excess flock is performed by this brush-and-beater machine. Strong air currents pulled through the nozzles help, and they take away the loosened flock.

Cotton Research Clinic

FIBER and PREPARATION
Highlight Cotton Clinic

- The 1956 Cotton Research Clinic, sponsored by the National Cotton Council, was held this year at Pinehurst, N. C., late in February.
- Reports briefed on the following pages cover fiber properties, high-speed drawing, direct spinning, bale coverings, and a follow-up on the N. C. State card settings for reducing waste. The remaining papers will be reviewed in the May issue of TEXTILE WORLD.

FIBER and YARN
Break Elongations Correlated

- Tests show that fiber break elongation is definitely related to yarn break elongation for short- or medium-staple cottons. Long-staple cotton produces disproportionately strong yarns.

By LOUIS A. FIORI, Southern Regional Research Laboratory

Forty-three cottons, varying extensively in fiber properties, were used to evaluate the relation of fiber-bundle break elongation (as determined by the Stelometer) to yarn break elongation. These cottons were processed into a series of coarse and medium yarns of varying twists.

Fiber break elongation, along with five other fiber properties (length, fineness, strength, length variability, and maturity) were correlated with yarn break elongation at twists for maximum skein strength, maximum single-strand strength, and at two constant twists (4.00 and 5.00).

Yarns produced from these cottons varied considerably in elongation at break and in strength. Yarn strength and break elongation were found to be directly related for the commercially grown short- and medium-staple cottons, but the long-staple and the experimental strong-fibered cottons were found to be anomalous in that they produced yarns whose strength was disproportionate to their fiber break elongation.

Fiber break elongation ranked first and strength ranked second in importance as contributors to yarn elongation for a 30s yarn at twists for maximum strength based on multiple-correlation analyses.

The modulus (secant) of cotton fibers and yarns was found to be highly correlated when the cottons were spun with twists that yielded maximum strength. This study also demonstrated that spinning conditions, particularly spinning tension, appreciably affect yarn elongation.

Tennessee Tests Confirm ELONGATION Relationships

• Five variable properties of fiber bundles and yarn were found to have no relationship, but there is a definite correlation between elongation measurements.

By K. L. HERTEL and C. J. CRAVEN, University of Tennessee

Load and elongation of fiber bundles at break for 680 cottons from three crop years were tested on the Stelometer. The results were compared with yarn appearance, percentage of picker and card waste, nep count, skein strength, and X-ray angle as measured on all these cottons.

Yarn-elongation measurements were available for about 60 of the cottons. An analysis was made of the correlations among five of the variables for all the cottons.

The only yarn property found to be definitely correlated with fiber-bundle elongation was yarn elongation. Fiber-bundle elongation was correlated with X-ray angle and less strongly correlated with tenacity measured at zero gauge length.

Skein strength was highly correlated with tenacity measured at $\frac{1}{8}$-in. gauge length. Stelometer values of tenacity and elongation were highly correlated with Instron values on the cottons.

The best procedure at present for getting percentage elongation with the Stelometer is to multiply the elongation-scale reading at $\frac{1}{8}$-in. gauge-length break by 0.80.

N. C. State CARD SETTINGS Reduce Waste 1 to 1.7%

• Practical mill tests show that N. C. State's recommendations for card settings, even when modified, will reduce card waste.

By DR. P. C. MEKTA

John L. Bogdan, of North Carolina State College, made some recommendations last year concerning the reduction of card waste that included reduction of flat speeds, relocation of mote knives, narrower cylinder-to-doffer settings, and higher lickerin speeds [TEXTILE WORLD, March, '55, p. 87]. Our experiments, however, were mainly directed toward studying the effects of lower flat speeds. In some instances, higher lickerin speeds were also tried.

In three mills, all of Bogdan's recommendations regarding speeds and settings were implemented. It should be remembered, however, that as far as waste reduction is concerned, the settings recommended by Bogdan are not necessarily the most desirable ones for all conditions; they can be taken only as a starting point for further trials.

In our mills, higher lickerin speeds could not be tried out in many instances because of the absence of roller bearings. Also, in most of our mills the top mote-knife-to-feed-plate setting was usually found to be quite small (not more than 1.25 ins.), which did not leave much scope for further reduction.

We were able, however, to implement reduced flat speeds in a large number of mills and save about 1% waste without any effect on yarn quality.

The criteria used for evaluating quality of processing were whether the quantity of impurities in the card sliver was increased, whether the short fiber in card sliver was increased, and whether there was any decrease of quality with respect to neps, yarn strength, evenness, and appearance.

In one mill, flat speed was reduced, lickerin speed increased, and card settings changed. In two mills, flat speed only was reduced. In another mill, both flat and lickerin speeds were changed. In still another mill where lickerin speed was already high, flat speed was reduced and settings changed to Bogdan's values.

Broadly speaking, the total reduction in card waste by using the modified conditions was 1.0 to 1.7%. Practically all of this reduction was achieved in flat strips. Trash-content analysis showed that the card sliver did not deteriorate, but more trash was taken out in flat strips.

Quality Is Unchanged

A study of mean fiber length, effective fiber length, and short fiber in the lap cotton, card sliver, and flat strips was made in two mills. The quality of the card sliver, as judged by these properties, was absolutely unchanged; and flat strips showed higher short fiber and lower mean-and-effective lengths.

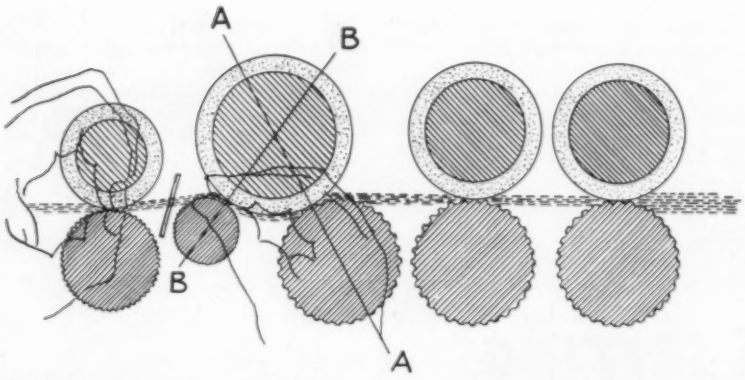
Data from five mills on evaluation of the quality of yarn spun from two sets of card slivers showed that lea strength, single-thread strength, and Fielden nonuniformity percentage did not differ significantly. The same was true of neps and foreign matter.

To summarize, I feel confident that by implementing Bogdan's recommendations, duly modified where neccesary to suit the local mill conditions, it is possible to reduce card waste 1 to 1.5% without any harmful effect on yarn quality.

New DRAWING FRAME
Employs Shaw Principles

- Processes wool, rayon, and synthetic fibers up to 2 ins. in length.

By R. M. JONES, Saco-Lowell Shops



DRAFTING ELEMENT has large middle top roll that rests firmly on the third bottom roll; the roll is prevented from resting on the second bottom roll by collars.

The Versa-Matic drawing frame employs the Shaw principle of a large middle roll that rests firmly on the third bottom roll, where it is held in close proximity to the second bottom roll. The slivers are fed into the back pair of rolls with suitable guides. There they receive a small tension draft to orientate the slivers and tension all the fibers.

As the fibers approach the bite, or nip, of the large middle top roll and third bottom roll, the leading ends of the fibers are rubbed and groomed by the arcuate surface of the third bottom roll. The middle top roll rests firmly on the third bottom roll, with a positive bite or nip at A-A. This same middle top roll is prevented from resting on the second bottom roll at *B-B* by collars.

The slivers are then given their major draft between the nip of the middle top roll and the nip of the front pair of rolls; but unlike the action with positive drafting rolls, the floating fibers are restrained from going forward out of sequence by the soft nip and snubbing effect of the second bottom roll and middle top roll. This action produces sliver of excellent average uniformity with less variation than any other system tested.

Metallic Fluted Rolls
Crimp DRAWING SLIVER

- Floating top rolls that mesh with the bottom rolls produce a sliver that is practically free of split-backs and double-backs.

By JOE R. WHITEHURST, Ideal Industries

In the drafting system we call Feathertouch, the flutes incorporate four different graduations. The finest graduation is on the front line of rolls; graduations on the other rolls become progressively coarser from front to back. The flutes were changed from a diametrical pitch with 14½° pressure angle to a formground flute with approximately 8° side angle without a diametrical pitch line.

The flute is thinner at the meshing depth than conventional to permit stock to pass at high speeds between bottom- and top-roll flutes without undue pressure on the stock from the weighting system. With a web weighing 60 grains per yard between the flutes, we can rock the top roll backward and forward with the fingers approximately 0.025 in. without moving the bottom roll, even though the spacers, or collars, are held together firmly by the weighting system.

The journal housings, used as collars or flute-depth spacers, do not revolve. The use of stationary bearing housings for regulating the depth of flute mesh makes it possible to control flute meshing very accurately and to maintain the same meshing indefinitely. All vibration from top rolls caused by revolving collars is removed.

This arrangement of bottom- and top-roll journal bearings removes pressure of the weighting system from journals because the weighting is supported by the journal-bearing housing that rests on slide stands. For instance, a 14-lb. weight can be hung on one end of a front top roll and a 100-lb. weight on the opposite end without affecting the tension.

The third and fourth lines of rolls are used to even out thick and thin places in the sliver entering the drafting system. This evening effect improves long- and short-term variation by removing short spaces of light or heavy sliver. Actually, the fourth roll becomes a metering roll.

High-Speed DRAWING FRAME
Runs 300 Ft. per Min.

• Advantages are high speed, efficiency, and production. Variation on carded work is 12 to 15%; on combed work it is 10 to 12%.

By E. KENT SWIFT, JR., Whitin Machine Works

Tests in Whitinsville and in mills show that the Model M drawing frame runs at 100 ft. per min. or 300 ft. per min. with about equal sliver variation. Typical figures from several weeks' test in a Southern mill on 1⅛-in. carded work show slightly below 14% on the Uster tester.

Another Southern mill's average of 24 tests on 1 1/16-in. carded cotton was 13.5% on the Uster tester. A Southern combed-yarn mill found that 1⅛-in. combed sliver came down to about 10% on the Uster tester after two processes.

We expect Uster average variation on carded work to be 12 to 15%, with the majority of the work run approaching 13%. On combed work, variation should be 10 to 12%. These figures represent what may be expected in good-running mills with average maintenance and scouring schedules.

Figures from one mill where the frame has run over three months show that the mill's employees are running this frame 24 hrs. a day at efficiencies of 80 to 88% at 300 ft. per min.

Efficiency will be very much a function of the size of sliver can used, particularly at the back of the frame. With no more picking of clearers and with the general cleaning loads reduced considerably, practically all the operator's time will be spent in doffing or replacing empty cans in the creel. We recommend a can of at least 14-in. dia. but prefer the larger 15- and 16-in. cans now coming into use. A 16x36-in. can will hold 28 to 30 lbs. on carded work and 30 to 32 lbs. on combed work.

Production can be varied by using the varipitch sheave furnished as standard. This sheave allows the frame to be set at any speed between 240 and 300 ft. per min.

Typical production of a 60-grain carded finisher-drawing sliver at 300 ft. per min. is 41.2 lbs. per hr. per delivery at 80% efficiency, or 330 lbs. per frame hour. A 55-grain sliver at 300 ft. per min. and 80% efficiency permits a production of 37.6 lbs. per hr. per delivery.

A fine-combed-yarn mill running a 50-grain finisher-drawing sliver at 275 ft. per min. will achieve 31.5 lbs. per hr. per delivery at 80%. These figures may be bettered, but we believe that 80% efficiency is a conservative figure based on our expectations of one operator being able to run four frames.

DIRECT SPINNING
Pays Off at Linen Thread Co.

• Coarse yarns spun from drawing sliver are stronger than yarns spun from identical stock on three-roll spinning. Floor space is a problem.

By RICHARD C. MOYER, Linen Thread Co.

Linen Thread Co. purchased a full-length 200-spindle Gwaltney frame equipped to produce yarns up to 10s directly from drawing sliver. We have been experimenting with this frame for the last few months; results have been satisfactory in quality of yarns produced. The creel arrangement and placing of supply cans, however, call for further study to obtain an ideal and practical setup for full-scale operation.

The frame is 4½-in. gauge with 3¼-in. rings and 12½-in. traverse. The supply cans are placed on the floor on both sides of the frame with a working alley between cans and frame.

Floor space is a problem. With all cans placed on the floor, the over-all width per frame, including the cans, is 135½ ins., which allows 27½-in. working alleys. With cans placed one above the other, the over-all width is reduced to 110½ ins. This setup was made in an effort to arrive at a practical arrangement for the creel, the traveling cleaner, and the supply cans.

The installation of the traveling cleaner presented a problem that we are working on with Parks-Cramer. Originally, the track for the cleaner was approximately 5 ft. from the floor. It was necessary to raise the track to a position 6 ft. from the floor to allow proper clearance for a person of average height; the sliver-lifting rolls were raised to a position approximately 8 ft. from the floor.

With this creel arrangement, and the lifting rods 8 ft. from the floor, the frame runs with practically no sliver breaking back in the creel. To creel the frame from scratch is something of a problem, and it is costly. The same method is followed as used on a slubber.

The frame has a three-zone drafting element with Duo-Roth in the front zone where the major portion of the drafting occurs. The draft will run

CONTINUED ON PAGE 188

Improved BALE COVERINGS Would Open New Markets

• Over 6,000 bales of cotton were packaged last year with experimental coverings and ties. Reports on the cotton are good, but costs are high.

By GEORGE W. PFEIFFENBERGER, National Cotton Council

In our cotton warehouses, bales of American cotton are prominently distinguished from those of other countries by the American practice of repeatedly cutting samples from the sides of a bale at various stages of marketing. This practice mutilates the covering, which to start with is of poor quality.

The National Cotton Council in 1952 set up a special industrywide packaging subcommittee to thoroughly investigate the possibilities of developing an improved package.

Within the last 1½ years, about 75 firms in the packaging and allied industries have been advised of the problems and the possibilities for profit in supplying the materials for cotton-bale packaging. Approximately 20 firms have responded with covers, bands, and buckles for testing.

While the greater part of the work has been concentrated on the covers themselves, bands and buckles are also of importance, and they are being investigated. Two companies submitted coated bands. In laboratory and weathering tests, both bands lived up to the claims of rustproofness and sparkproofness, but the cost would be about 20¢ per bale more.

Field Is Narrowed

From prelimintary tests, we narrowed the field for covers down to films, paper, burlap-laminates, and nonwoven fabrics for large-scale tests. The various cover manufacturers supplied a total of over 6,000 patterns.

Several hundred of the test bales have now arrived at cotton mills. In general, the reports are good, especially with respect to the performance of the covers themselves, if one makes allowance for sampling practices. An incomplete tabulation shows that 87% of the bales arrived at mills in better condition than those wrapped in jute or burlap, and the open sample holes were not imbedded with strings or particles of jute fiber.

Opening-room workers advised that 66% of the bales required no picking of bagging; no harsh fibers were imbedded in the cotton. Of the experimental bales, 78% needed no precleaning before opening. Heads were well protected in 82% of all cases. Contamination and waste were reduced in 74% of the test bales, and labor savings in the opening room were reported for 63% of the bales.

These studies indicate that a potential annual market for 150-million sq. yds. of covering material, 100-million ft. of patching tape, and 900-million ft. of high-strength banding tape awaits the packaging industry. A potential new use for 200,000 bales of cotton is in the making if cotton coverings and ties are adopted.

Direct-Reading Instrument Measures COTTON LUSTER

• A simplified gloss meter measures the luster of raw cotton and gray mercerized yarn through a 180° angle. Readings range from zero to 100°.

By DOROTHY NICKERSON, U. S. Dept. of Agriculture

A single-answer, direct-reading instrument especially adapted for measuring the luster of raw cotton and gray and mercerized yarns has been developed. The machine has a special sample clamp that fits into a turret-top holder that may be turned through 180° for measurement of the sample; threads or fibers face first in one direction and then in the opposite direction as a check on sample preparations.

The sample is illuminated at 45°; the light leaving the sample is measured at 0° (diffuse) and 45° (specular); and by means of a special circuit the ratio is read directly from an automatic indicating scale. The scale reads in terms of percentage luster—100% for high luster and 0% for zero luster, according to the formula 100(1-D/S) in which D is the diffuse reflectance and S the specular reflectance.

Samples are quickly and easily prepared from yarn skeins on special holders, and a similar though narrower holder is used for measuring combed fibers from pinches of blended raw-stock samples. Measurements have been made on all raw-stock and gray-yarn samples of the 1955 standardized variety cottons and on all mercerized yarns in finishing tests made on this series.

The instrument is an adaptation of a simplified all-purpose gloss meter under development by R. S. Hunter.

TEXTILE MAINTENANCE MEN exchanged ideas on seven subjects. Discussion leader James W. Ward (left), Robert D. Robbins, (standing), Chicopee Mfg. Co., and several other men kept the ideas bouncing back and forth.

Today's MAINTENANCE TRENDS Point to Better Results

• New trends at the Seventh National Plant Maintenance and Engineering Conference attended by 18,500 engineers and maintenance men show that the men responsible for plant buildings, equipment, and machines are discarding slapdash methods. They are replacing the obsolete methods with scheduled maintenance.

A RAPID-FIRE EXCHANGE of ideas livened up the textile round-table discussion at the recent Seventh National Plant Maintenance and Engineering Conference held in Philadelphia. The textile discussion was one of 50 sessions on 26 phases of factory upkeep held at the conference.

James W. Ward, head of the Electrical Engineering Div., Avondale Mills, Sylacauga, Ala., led the textile session, which followed a pattern pretty much like that of the other 49 meetings.

Men attending the conference, and the show held concurrently, made their specific target—keeping records for better maintenance results. Record-keeping materials discussed and shown ranged from punched cards sorted manually to an electrically powered card-filing unit containing 40,000 maintenance records, any one of which can be delivered in only a few seconds.

Discuss Seven Subjects

Last year at the conference and show held in Chicago, the exhibits stressed the importance of record-keeping systems. And this year, both the show and conference emphasized record keeping.

Other subjects that came in for a fair share of interest were:

1. Yardsticks to measure the effectiveness of maintenance
2. Getting maintenance men to work as a team
3. Getting the most out of electrical equipment
4. Maintenance painting

Seven subjects were discussed at the textile round-table session: (1) maintenance organizations, (2) electric motors, (3) electric-motor controls, (4) maintenance of production machinery, (5) instrument maintenance, (6) air compressors, and (7) air-conditioning equipment.

The exchange of ideas showed two important trends in textile-plant maintenance:

1. Record keeping and scheduled maintenance
2. Production machines maintained by mill maintenance departments

One Mill's Methods

The round-table leader discussed the complete maintenance organization at his group of mills. And during his discussion, other men were asked how they handled specific problems. The report of the discussion leader is given here:

Avondale Mills has nine plants in seven cities; three of the plants are in Sylacauga, Ala. Each plant has a similar maintenance organization, but the maintenance department in Sylacauga covers all three plants.

Each maintenance organization consists of a master mechanic with all of the maintenance departments under him. There's a foreman of each department, and the number of employees is determined by the amount of work to be done.

The departments are electrical, machine shop, pipe fitting, plumbing, carpentry, air compression, boilers, welding, humidification, painting, outside maintenance, and the guards.

Systems Are Similar

The Sylacauga plant-maintenance department consists of a master mechanic, two foremen, and a head man for each department. The total main-

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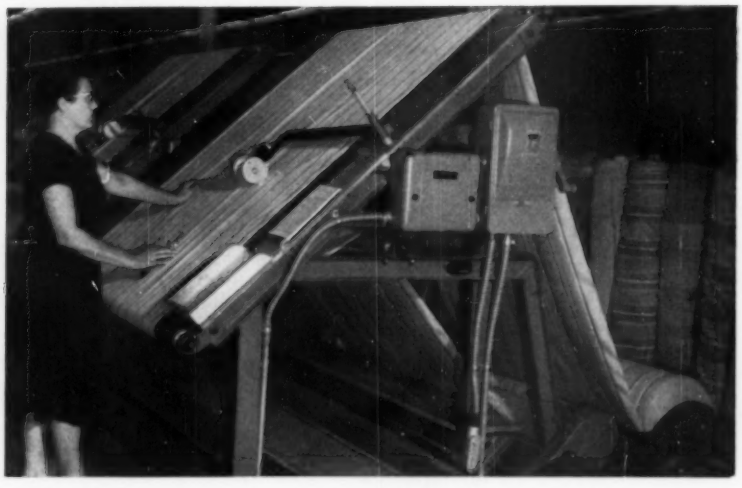


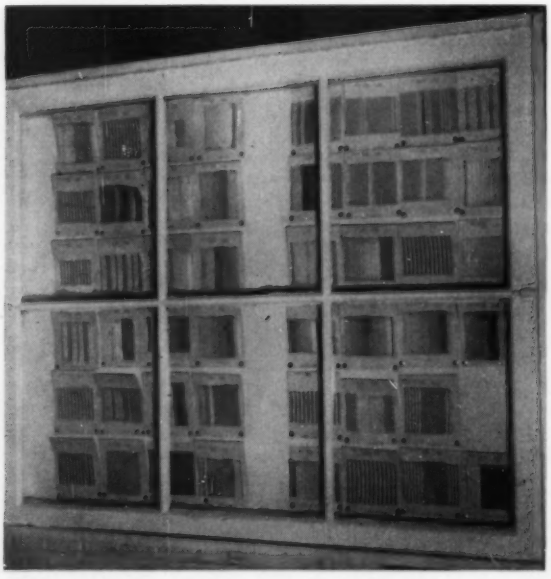
NEW GRADING MACHINES were made by mill maintenance men. They are operated by a foot switch.

Avondale's NEW CLOTH ROOM *Leads to Better Cloth*

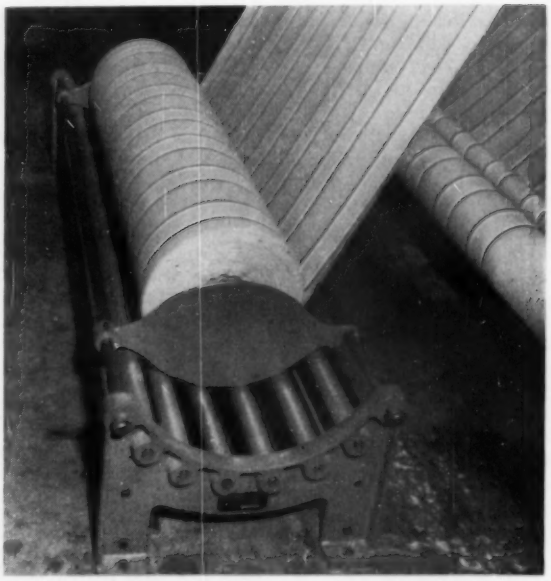
A complete new building and new equipment make it possible to use better methods of controlling cloth quality. Ideas for better cloth are—

- Grading cloth soon after it's doffed from the loom
- Furnishing records to properly place the blame for defects
- Evaluating the ability of graders, and rewarding them

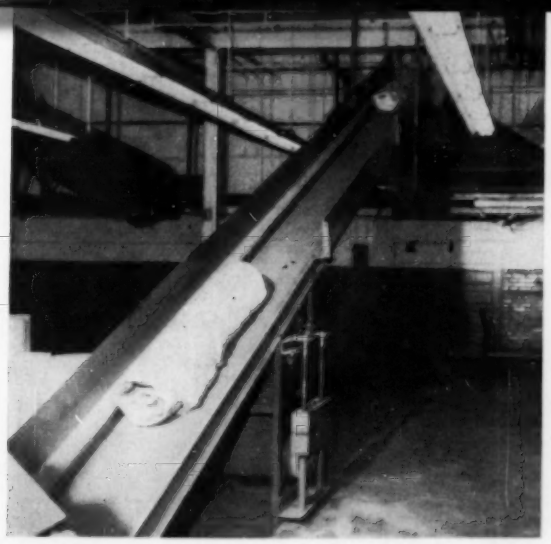
By **RICHARD B. PRESSLEY,** Associate Editor, TEXTILE WORLD



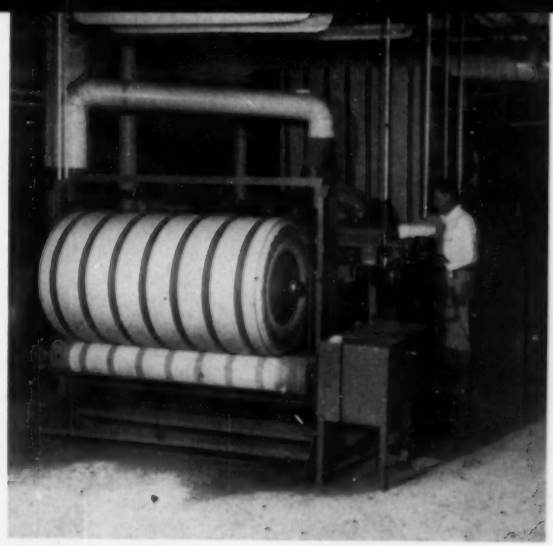
CLOTH DEFECTS of major, minor, and critical grades are posted in a swatch of each style of cloth on a bulletin board.



CLOTH TROUGHS at grading machines eliminate having to mount rolls on a rod. Cloth is just laid on the rollers.



PHYSICAL HANDLING is reduced by this conveyor that goes under a line of grading frames. Cloth is rolled onto the belt.



ONE OPERATION in sewing, shearing, and brushing keeps cloth moving fast. There are three lines like this one.

THE NEW INSPECTING AND BURLING ROOM at Avondale Mills' Bevelle Plant at Alexander City, Ala., has been in operation only a few months. Finishing Foreman C. I. Adamson says this about the modernization: "The new building, equipment, and equipment layout have cut handling operations and improved efficiency almost 20%.

"Other benefits are faster flow of cloth to the finishing department, and consequently cloth is shipped faster. Cloth is inspected sooner after it's doffed from the looms; all cloth is inspected within one day after it's doffed. This practice keeps weave-room foremen informed of looms making seconds so that steps can be taken at once to prevent further seconds."

The new burling room is located near the center of the largest weave room at the Alexander City plant. Therefore weave-room cloth doffers truck the cloth straight from each loom to the cloth room, where they stand the cloth on end near burling machines. Rolls of cloth average 150 yds. in length.

The burling room operates only on the first and second shifts. Before the modernization, there were three full shifts.

Grade 50 Styles

Twenty women on the first shift and 18 on the second shift inspect, burl, and grade cloth in one operation. Cloth is graded from 854 looms.

Fabrics are woven from 40 to 72 ins. wide. The fabrics include ticking in plain and fancy stripes, drapery materials, gabardines, denims, twills, and drills. Most warps are cotton yarns; filling yarns are either cotton or spun rayon. An average of 50 styles in 100 patterns is woven.

The graders' production varies by the style of cloth woven. On tickings, for example, production is 26,000 yds. per grader on styles 40 ins. wide plus 13,000 yds. on styles 72 ins. wide for a total of 39,000 yds. in 40 hrs. On denims, production is 28,000 yds. per 40 hrs. A total of approximately 600,000 yds. of cloth is graded in the room each week.

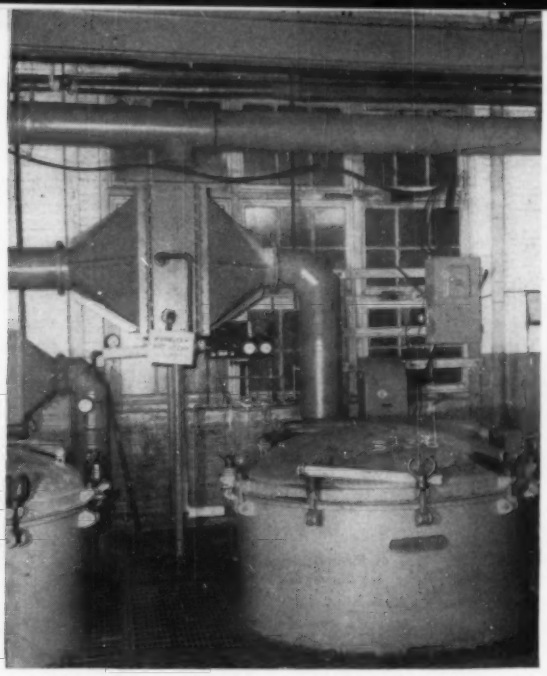
Cloth is graded by minor, major, and critical defects. A minor defect counts 1 to 3 points; a major defect is charged as 2 to 4 points; a critical defect counts 6 to 12 points. The total points allowed in a roll of cloth depend on the style of cloth. Three given styles, for instance, allow 39, 48, and 56 points. Other styles have set point allowances per 100 yds of cloth; for example, 20, 30, 35, and 40. Here, the 35-point allowance is for fancy ticking.

Reports Are Quality Tool

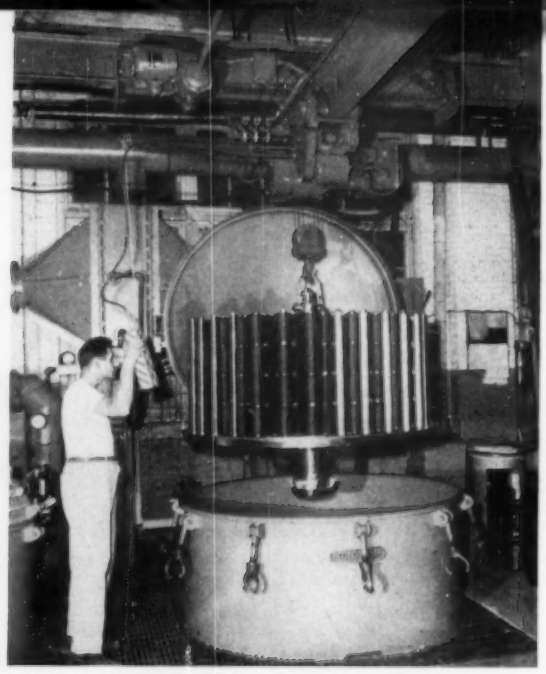
A grading report is made out for each roll of cloth graded. If a roll of cloth is graded as seconds for a con-

CONTINUED ON PAGE 194

FINISHED CLOTH is put up in both rolls and bolts. Here, 72-in. fancy ticking is being packed one roll to a box.



LOADED DRYER is supplied with tremendous quantities of filtered hot air from the Roots-Connersville blower located in an adjacent room. Heat is supplied to the air by a fin-and-tube heater located in the air supply line above and left of the dryer.



THIS LOAD OF DRY YARN is being taken from the dryer 30 mins. after starting up. Completely powered hoist and tramrail system permits loading, unloading, and transporting yarn to any point in the dyeing-drying area.

Boger & Crawford Cuts DRYING TIME 90%

Packaged-yarn drying had been a production bottleneck at Boger & Crawford, Philadelphia yarn dyers, until a new Smith, Drum dryer was installed. With the new machine, the company has—

- **Cut drying time up to 90%**
- **Reduced dye migration**

By ROBERT W. PINAULT, Assistant Editor, TEXTILE WORLD

BOGER & CRAWFORD licked two problems common to packaged-yarn drying—time and color migration—when it added a high-speed dryer to its equipment.

The plant processes yarns for knitters and weavers. All fibers are handled to some extent, but one of the largest items is 60/2 mercerized cotton yarns that go mainly to knitters.

The dyeing process varies, depending upon shade, type of dye, and aftertreatments; but drying 60/2 yarn always required 4½ to 5 hrs. to complete the process.

The plant uses several Smith, Drum & Co. dryers, centrally supplied with fresh air that is pulled through an electrostatic filter. To get ample air for the new installation, a new 12-in. intake line was run from the filter to the Roots-Connersville blower that drives air through the yarn packages.

A tremendous quantity of air is supplied by the blower, driven by a 125-hp. Louis Allis a.c. motor. The air is heated by a fin-and-tube heater placed in the line close to the dryer itself. Heater area is about four times that used in the slower-speed dryers.

How B&C Works It

C. A. Dotger, superintendent for Boger & Crawford, says, "There really isn't any change in our procedure with the new dryer, except that drying time is cut down to 10 to 15% of what we used to require.

"After dyeing, we hoist the load out of the dyeing machine with a power hoist and the powered carriage carries the load to the dryer and drops it into place. We don't use a separate extraction process, although the yarn will be carrying about 200% of its weight in water.

"After locking the dryer cover in place, we turn on the blower. Fresh filtered air at 220 to 250° F. is forced through the yarn, and in 30 mins. the operator can hoist out the dried yarn. The normal load is 520 lbs.

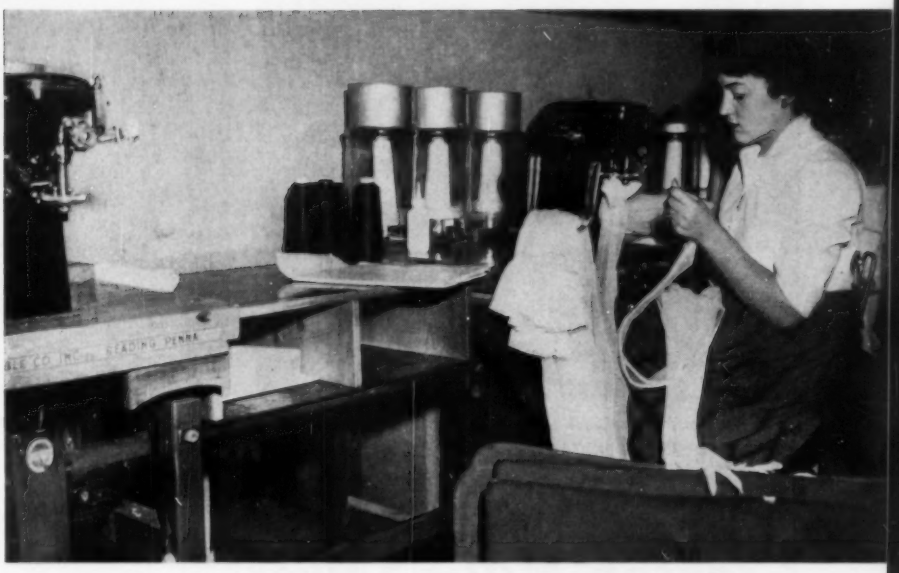
"We've gained another advantage by rapid drying, too: there is practically no package staining from color migration. That means fewer headaches and rehandles."

Add to that the well-known fact that a good big man can beat a good little man, and you've about explained what happens in the new dryer. The yarn is flooded with an outsize quantity of fresh hot air, and evaporation of moisture is correspondingly rapid.

Power requirements are about twice that of the older dryers, but the job is done in 10 to 15% of the time previously required.

Our Cover Photo

Mills faced with the problem of training workers in operations that require high skill are turning to new training methods for help. Grayson-Millis Hosiery Mills (page 102) has cut training time for new seamers, improved the quality of their work, and successfully retrained girls who were below par in production.



KNITTING-MILL PROBLEMS—

Some of them are new.

New yarns and machines have created new problems. The introduction of man-made yarns introduced a host of problems. Knitting mills are gradually finding answers to these questions through cooperation with fiber producers and machinery manufacturers, exchange of technical knowledge, and experimentation in the mill.

Some of them are old.

Shrinkage of knitted fabrics and training new workers are problems as old as the knitting machine. New methods and instruments are now being used successfully to combat these problems. This special knitting section shows how these new techniques are being used to increase efficiency, quality, and profits.

By **JAMES H. BLORE,** Associate Editor, TEXTILE WORLD

EYE TESTS are given to all prospective learners by the instructor. Aptitude tests also help to weed out possible poor producers.

SEAMER TRAINEE keeps records of her production, starting with single-stocking times and increasing to daily production figures.

Grayson-Millis Solves SEAMER-TRAINING Problem

• Training girls to run seaming machines took 13 to 14 weeks one year ago. Girls now reach the same production and do a better job in 7 to 8 weeks. With a new training system, seconds are reduced and training time is not wasted on non-producers.

WHEN GRAYSON-MILLIS HOSIERY MILLS, Independence, Va., recently expanded its knitting capacity, one of the problems was to train enough seamers to take care of the additional production.

Forty extra seamers were required. Under the old system of training, where one instructor stood over the trainee all the time and could train only two or three girls at one time, two years would have been required to train 40 girls.

The analytical method of training [TW, Mar., 54, p. 98] was introduced, two instructors were used, and the 40 girls were trained in eight months. The system is now being used to retrain girls who are below par in their production. Some seamers have doubled their production since they were retrained.

Girls directly from school are preferred for learners. These girls are given tests before they are selected for training. Those girls with poor aptitude and faulty eyesight are weeded out.

The aptitude tests include two for dexterity: a pegboard test and a test where different shapes are split up and reassembled. A Keystone View stereoscope is used to check the eyes of all applicants for training.

These tests are conducted by the instructors, who received their training from Geoffrey Ladham's Associates. Two instructors were employed while the training program was in full swing, but one instructor has now returned to normal production.

There were 34 girls in training at one time when the program was at its height. Four trainees started the program last April, and two new trainees were added each week until the required number of seamers were in full production.

Each trainee is provided with a work schedule kept in a loose-leaf folder. Seaming tolerances are printed on the first sheet, although the trainee is encouraged to produce perfect seams.

Taught To Cope With Problems

Trainees are taught details such as correct threading before commencing seaming. Each girl is taught to understand the problems that may confront her and what to do to get out of bad habits.

Several dexterity exercises are given each trainee before she starts an actual seaming job. One of the exercises

INSTRUCTOR can handle more girls than under the old system. Beginners' exercises include running stocking-shaped tricot fabric through an unthreaded machine.

WORK SHEET

Name *Mary Smith* No. *268* Operation *Seaming*
Week begining *Aug. 29*

Day of week	Mon.	Tue.	Wed.	Thu.	Fri.
Days in training	56	57	58	59	60
Time to complete 1 doz. pairs Time 10 doz. each day	You can leave off all timings now. Keep returns, production, and graph. (Jane)				
Day's returns	1 / 9	1 1 / 13	1 3 7 / 10	4	8 / 16
Trainee's target	30				
Day's production	26	27 12	29 11	26 2	11
Time lost					Went home at noon.
Comments			Good! (Jane)		

WORK SHEET is kept up to date by the trainee and checked daily by the instructor. The instructor sets the target to the girl's ability.

consists of running a stocking-shaped piece of tricot fabric through the cups at a slow speed with no thread in the needle or looper. The tricot fabric has little stretch, and the girl learns to handle the stocking correctly.

A clock is stationed on each seaming machine, and trainees are taught to time themselves for short and long runs. All girls are taught how to make graphs so that each girl eventually makes her own production graph.

Changeable pulleys are used on the drive shaft of the seaming machines. When the seamer starts seaming fine-gauge hosiery, the machine belt runs on the slow pulley. The pulley size is gradually increased each time the trainee reaches her target production.

Trainee Times Herself

She times herself on single stockings and enters the results on her work sheet. The job is gradually increased until the trainee is working on 10-min. runs, then 30-min. runs, and finally one day's production.

The instructor keeps close watch on the trainee but does not stay with her all the time. The instructor always examines the trainee's work sheet at the end of the day.

Graphs for all trainees' production are posted on the wall in the training section. The instructor brings the graphs up to date at the end of the day's work.

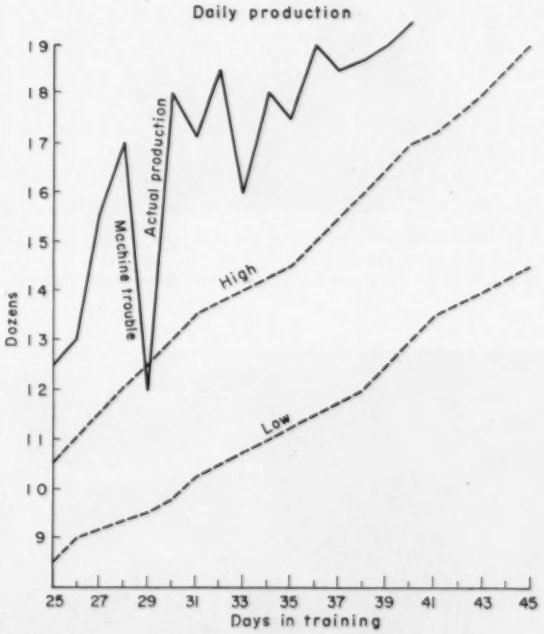
During the early stages of training, red lines are drawn on the chart to signify low and high production. The red lines are obtained from the average past records of many mills.

This chart not only shows the instructor the trainee's progress at a glance but gives the trainee an incentive to push her production higher. If certain trainees' production is not up to standard, the instructor can concentrate more on these girls.

Reach 30 Doz. in 60 Days

Some girls reach the 20-doz. daily-production mark at 40 days and the 30-doz. mark at 60 days.

The training center is cut off from the main seaming section by a heavy curtain. After the trainees have reached



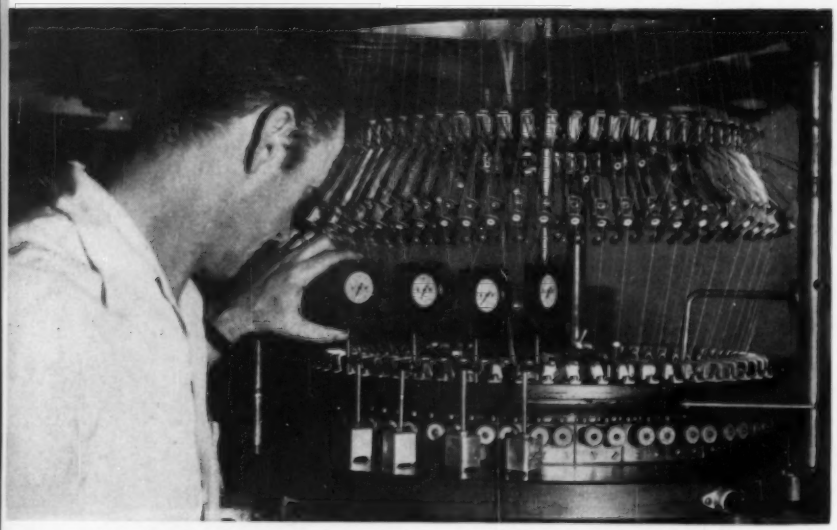
PRODUCTION CHART shows an above-average Grayson-Millis trainee's production. Dotted lines indicate average high and low production of trainees from a number of other mills.

their full production, they remain on the same machines.

One of the advantages that Grayson-Millis has found in the new system of training is that time and money have been saved in training girls who never do make the grade. Under the old system, these girls amounted to about 50% of the learners that were hired. This figure is now practically zero. Fewer seconds are also made during the training period.

How Quality Mills Reduced KNIT-GOODS SHRINKAGE

• A new system of adjusting knitting machines is helping to solve some of the problems dealing with the shrinkage of knitted fabrics. Several thousand inches of yarn, instead of the usual few feet, are measured when the machine is set up. The results are a maximum variation in course length of 5% and cloth shrinkage of less than 8%.



KNITTING MACHINES are set up with four yarn meters. Cams are adjusted to the figures on the dial, which represent the draw or the length of yarn in one course. Machines with various head sizes can now be set up to knit fabrics with identical shrinkage and yield.

RAVEL TEST is made by Engineer Jim Barber on a long table with a scale on the front edge of the table. One course at a time is raveled from the cloth and measured

EXCESSIVE AND VARIABLE SHRINKAGE of knitted fabrics has long been a problem to knitters. In recent years, much work has been done to control shrinkage. Among the foremost mills pioneering in new shrinkage-control techniques is Quality Mills, Inc., Mount Airy, N. C., which has succeeded in reducing shrinkage to less than 8% and is now running at 5%.

Engineer Jim Barber of Quality Mills, working with Consultant John Hamilton, discovered that one of the major causes of excessive shrinkage was the lack of uniformity in each knitted course. Ravel tests on fabrics made on machines set up in the conventional manner of spotting the yarn showed that the variation in the lengths of yarn in each course was as high as 22%.

A better method of setting up machines was the first step toward the solution of the problem. Mr. Hamilton built a yarn meter that measures the amount of yarn as the yarn is knitted into the fabric. The variation in the length of yarn is now controlled to within 3% for rib fabrics and 5% for flat-knit fabrics.

Needles Determine Width

Cloth widths are no longer determined by cylinder size but by the number of needles in the machine. The yarn-meter readings are converted to the length of yarn in each stitch, and machines with various head sizes can be set up to knit fabrics with identical shrinkage and yield. The result is more-uniform cloth with reduced distortion.

Wash tests determine the zero width or the width after washing and screen drying. Machines are set up by charts based on these tests. Spreading schedules are no longer controlled by head size but by the number of needles in the machine.

As no one process completely controls shrinkage, all processes are carefully controlled so that excessive ten-

sion and distortion on the fabric is removed. Incoming yarns are carefully tested for size, twist, strength, moisture, and appearance in a well-equipped laboratory close to the knitting room.

Yarns are stored in the knitting room until required for knitting. Humidity is controlled in the knitting room with Abbeon humidifiers, and little trouble is encountered with lint.

How New Styles Are Made

When a new fabric style is to be made, a basic chart for setting up the machines is prepared. Information for this chart is obtained by knitting one ravel test and two weight tests into the roll of sample cloth. The ravel-test piece is made by knitting a colored end for one revolution on Feed No. 1. The colored end shows on which feed the corresponding courses were knitted.

The two weight-test pieces are made by knitting colored ends 1,000 courses apart. One of these weight-test pieces is cut out in the gray; the other is processed the same as regular cloth.

The test pieces are washed in an automatic washing machine and dried without tension until consecutive tests show no further shrinkage. This state is called the zero-zero condition. The fabrics are laid flat on wire-mesh screens to dry to prevent distortion of the stitches. Drying is done at normal room temperature.

The test pieces, now at zero-zero condition, are given various tests to show the characteristics of the fabric style and determine the standards for setting up the knitting machine. The averages of the results are plotted on graph paper to form the basic chart.

The data on the graph include the tubular width, the length in inches of 1,000 courses, the weight per square inch, the courses per inch, and the length of yarn per stitch. The last item is determined by a ravel test.

How a Ravel Test Is Made

In preparing a ravel test, the end of the fabric last knitted is raveled until a complete course can be removed with no trouble. A cut with scissors is made down one wale for the number of courses that correspond with the number of feeds on the machine.

The fabric is laid on a mark on a long table in the laboratory. The person making the test draws the course from the fabric by walking beside the table.

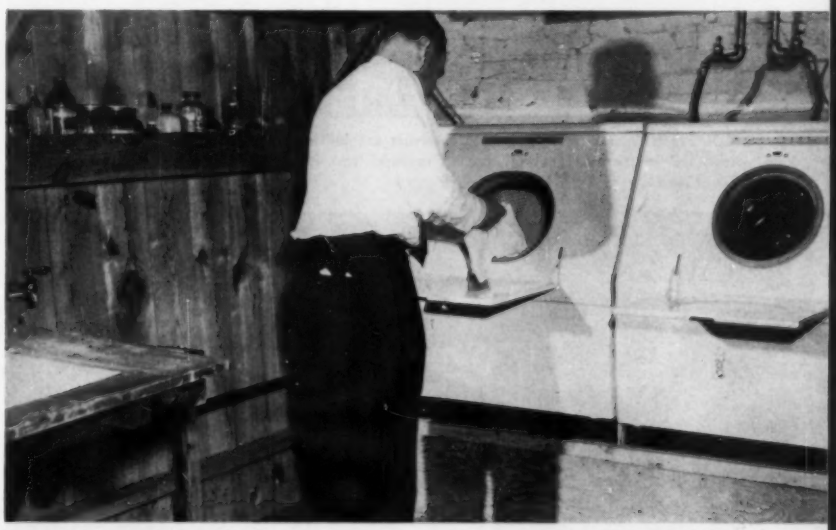
When the course is completely raveled, the free end is held to a scale on the front edge of the table. This scale indicates the length of yarn in inches in one course and runs up to 300 ins. The results for each course are entered on a form, and the average length is calculated. The length of yarn per stitch is found by dividing this figure by the number of cylinder needles.

Test results are produced on a graph that gives complete information about a particular style of cloth. Variations of this cloth, within machine and yarn limitations, can be accurately calculated and produced.

Part of this information is transferred to another chart that shows how the cloth should be processed. Shown on this chart are the coordinates for calendering width, qualitizer width, lay width, and zero width.

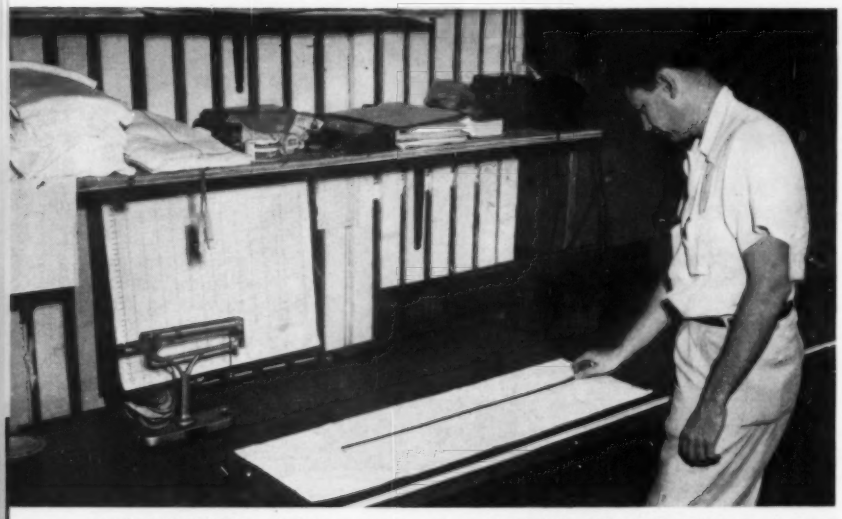
A working chart is prepared for each cut or gauge of machine. The draw, or the length of yarn in one course, is calculated by multiplying the yarn length per stitch by the number of needles in the cylinder. The draw figure is then given to the fixer to set up the machine.

Different yarn sizes are allowed for on the meter by a constant obtained by checking the actual ravel of various



TEST FABRICS are washed in an automatic washing machine to discover the zero-zero condition. Tests are run until consecutive tests show no further shrinkage.

WIRE-MESH SCREENS are used for drying the test lots from the washing machines to prevent distortion of the stitches. Drying is done at normal room temperature.



COLORED YARNS at 1,000-course intervals are knitted into the cloth to help in the ravel test and in measuring shrinkage. The ravel test is started on the colored course from Feed No. 1.

FINISHED CLOTH is laid flat and never piled too high. Because the widths are more uniform, the fabric is easier to lay up and garment shapes are more uniform.

sizes with the meter reading. The meter reading is then changed to inches by the constant.

How Meters Are Used

Quality Mills uses four meters at one time to set up its machines. The meters are held to the cylinder ring by a magnetic base. The yarns leading to the needles are run over the drums on their respective meters.

The cylinder ring is marked and the cylinder turned until this mark lines up with a mark on the fixed outer ring. The machine is turned under power for 10 revolutions, and the draw is read from the dial on the meter.

If the reading does not coincide with the required draw, the machine is adjusted by raising the stitch cams if the figure is too high and lowering them if the draw is too short. The machine is checked again with the meter. This operation is repeated until all feeds have been checked.

Two Machines Checked Daily

To keep machines in control, fabric from two machines is checked each day. Colored yarns are introduced 1,000 courses apart. One colored yarn is located on No. 1 feed so that any trouble on individual feeds can be located rapidly.

The test is made near the middle of the roll, and the work ticket is labeled as a test lot. One test is cut out at the cloth room and one at the calender. The tests are brought to the laboratory, where they are weighed, measured, and given a ravel test. The gray test is started on Course No. 1 to help the fixer locate faulty cams.

The ravel-test results are entered on the data sheet, which also shows the meter reading, courses, wales, length, width, and weight per square inch. The machine is checked if the results are out of the allowed range.

Both the gray and finished test samples are cut along the colored lines and measured and weighed. Comparisons of the two samples give kier-bleach loss to check on bleaching materials and the bleaching process.

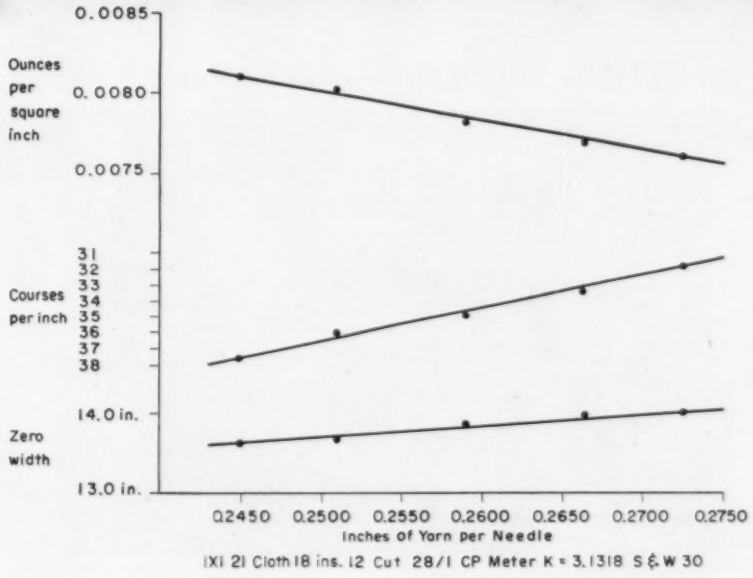
Fabric is also given ball-burst tests. Since the knitting machines were set by the meter, ball-burst tests have improved. Short courses in the fabric greatly decrease the bursting strength because they break first. Fabric made on machines set by hand usually has one or more courses much shorter than average.

After bleaching, all fabric is spread wet to compensate for shrinkage that occurs in both previous and future operations.

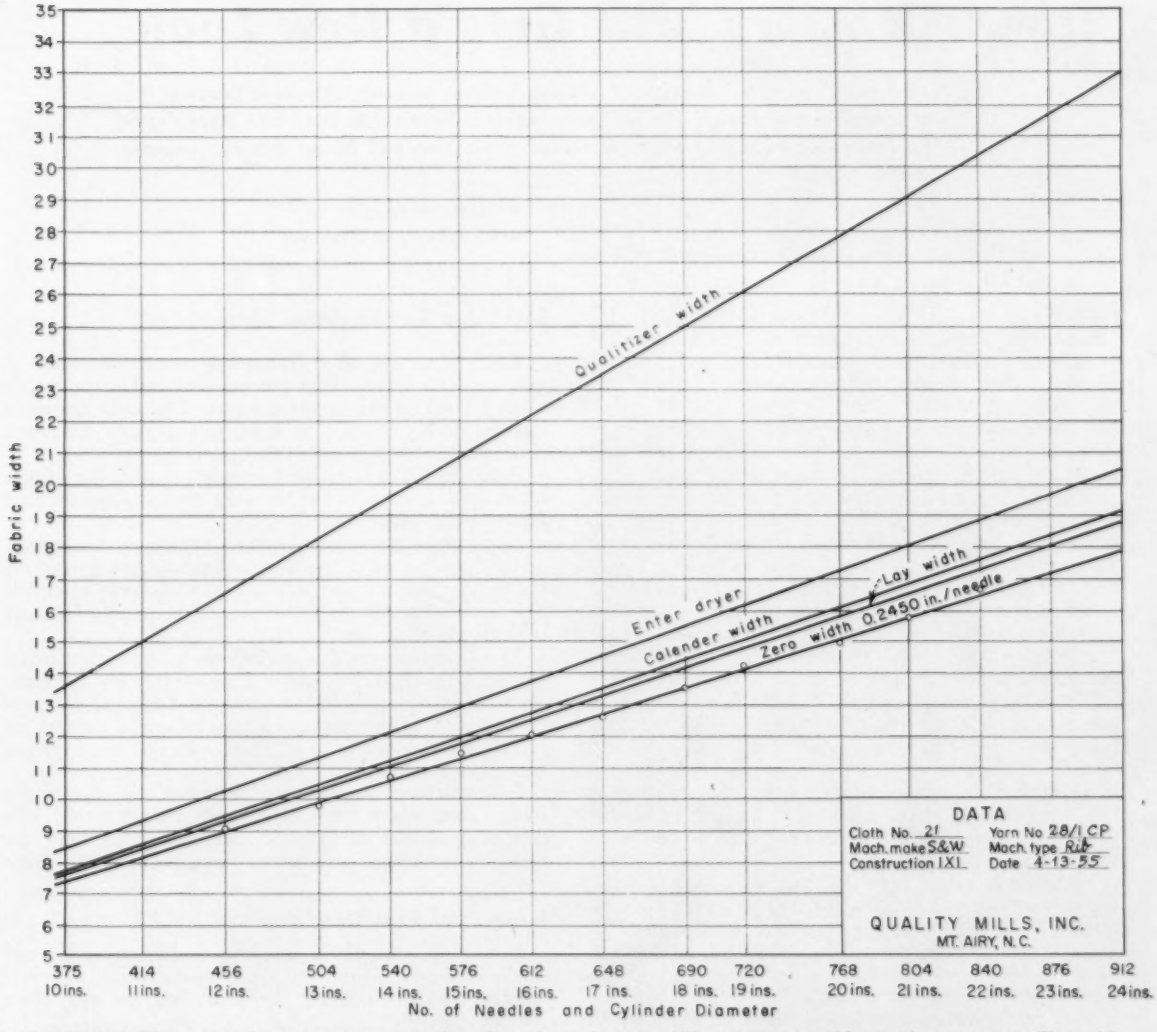
Better cutting results from the new system. Because the widths are more uniform, the fabric is easier to lay

up and garment shapes are more uniform. Cutting lays are now increased to 6 ins. or more with no danger of affecting the size and shape of the garments during cutting.

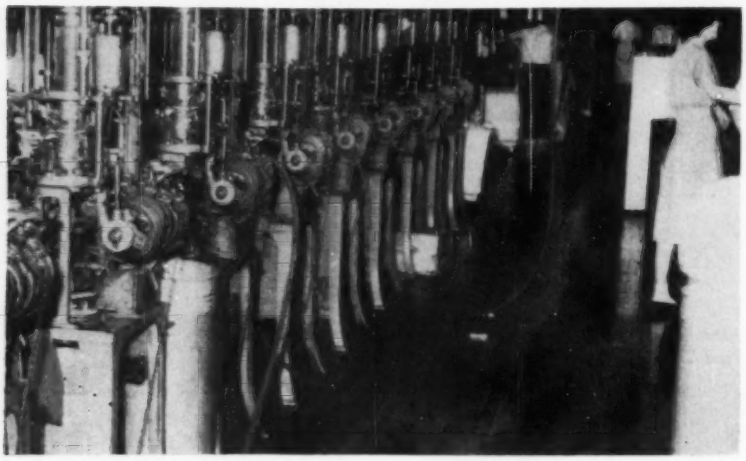
In addition to giving its customers garments that shrink less than garments made from fabric made on the old system, Quality Mills has also found that costs can be controlled accurately because the fabric yield is kept constant.



BASIC CHART is made from the results of the sample wash tests and the ravel tests. A chart is made for each fabric style, and the length of yarn per needle is easily calculated.



WORKING CHART, prepared for each cut or gauge of machine, shows the zero width and correct widths at later processes. The widths are based on the needles in the machine, not on the machine width.



KNITTING MACHINES were all consolidated in one room. Komet machines were moved after hardwood floors were put in during vacation.

Athens Hosiery Mill Gets a New Look

Modernization of a 100-year-old building without seriously slowing production was accomplished by Athens Hosiery Mills, Athens, Tenn. The time and money spent on renovation is paying off in increased production and better quality. Improvements covered—

- **Floors**
- **Conveyors**
- **Machine layout**
- **Painting and cleaning**

THE BUILDING that houses Athens Hosiery Mills, Inc., Athens, Tenn., was a cotton mill built nearly 100 years ago. Changes have gradually been made, but the biggest change occurred last year when the whole plant was renovated without disturbing production. In spite of the change-over, the mill had the biggest year in its history.

New floors were put in place, walls and ceilings were painted bright colors, and conveyor systems were installed. Knitting machines were concentrated in one room, and production flow was reorganized. Seconds have already dropped by 0.5%. Less time is spent in cleaning chores, and production flows through the mill more quickly.

Three men spent the whole year painting and putting in new maple floors protected with a transparent nonskid textile finish. Most work on the floors was done during vacation time and on week ends.

The ceilings are all painted white, while the walls are painted in various two-tone colors. Slightly darker shades were used on the lower part of the walls to a height of 4 ft.

All fire-control equipment such as sprinkler systems are bright red. Electrical equipment, such as switch boxes and motors, are blue. Du Pont paint engineers helped in the selection of colors.

Materials handling has been speeded with new equipment. A chute was installed to transfer goods from the turners and inspectors to the dyehouse. All knitting, looping, and gray inspecting are done on the second floor; and socks for dyeing or bleaching slide down the chute in loose form into wooden trucks.

Each batch is weighed in the truck to calculate the dyeing formulas. Most socks are dyed loose in rotary dye machines.

Socks Are Tumble-Dried

After extracting, all cotton goods are tumble-dried to give a better hand. This process also makes the goods easier to pull on the boarding forms. The socks dry more quickly, and yellowing of light-colored socks has been eliminated.

Boarding tables have been arranged so that the largest forms are at one end of the boarding room and the smallest forms at the other end.

A gravity skate-wheel-type conveyor down the center of the boarding room has increased production by cutting the walking and carrying of boarded socks to the trimmers. Management at Athens figures this conveyor paid for itself in three months.

The conveyor track is adjustable so that the center section is level. Trimming is done at this level section. Two trimming machines are arranged about 20 ft. apart on the edge of the conveyor. Boarded socks are laid on boards on the conveyor so that every lot must pass a trimming machine.

Both machines are connected by a 6-in.-dia. pipe to the suction box where the clipped ends are gathered. The trimming-machine operator removes the goods from the conveyor in dozens and places them back on the same board.

Pairers All Face One Way

Inspecting and pairing are done in a room at the end of the conveyor. These girls are supplied by one materials handler, and all sit facing the same direction away from the conveyor.

Finished goods are laid out in racks that line one side of the finishing room. Curtains cover the stock racks to

TUMBLE-DRYING socks after dyeing and bleaching gives them a soft hand, helps boarders to put them on the forms easier, and helps to dry them faster.

TRIMMING MACHINES are installed at the edge of the conveyor. Largest size boarding forms are at one end of the room. All goods pass a trimming machine.

keep dust off the goods, but they also contribute to the room tidiness.

A complete order is assembled in the racks. Orders are placed on four-wheel trucks and pushed to the head of the table.

There are four finishing tables where labels and transfers are placed on the goods and the goods packed in boxes. Two of the tables also include a section for cuff turning. To provide ample light for these operations, twin 8-ft. lamps run the full length of each table.

Attaching pin tickets is the first operation at each table. One girl does this job and passes the ticketed goods to the next girl, who applies transfers with a hot iron.

A third girl attaches rider tickets to the goods, while the next three girls at the table apply stickers. The eighth girl folds the socks, and the last girl puts them in boxes.

Each Table Processes One Order

Each table has only one order traveling down it at one time. No order is started unless it is complete and transfers and boxes are available.

Each worker at the table is paid on a team basis, and all are paid an equal amount. In some cases where a style change may affect the production, girls shift jobs or tables to synchronize the flow.

Empty trucks are pushed to the end of each table, and boxed goods are placed on these trucks for movement to the shipping room.

Supplies for the finishing room are kept in store rooms across from the stock racks. Transfers are stored on pegs on a large wheel. The wheel is made from ¾-in. plywood and rotates on a ½-in. shaft supported on 2-in. iron brackets suspended from the roof.

A 6-in. rubber-tired wheel rotating on the edge of the large wheel keeps the large wheel from tilting when it is fully loaded. This method of storing takes up little space and yet allows easy access to all transfers. Empty boxes are kept in a separate room and are fed to the finishing tables from two windows opening to the finishing room near the head of the tables.

System Reduced Supervision

This system expedites the flow of goods through the room, cuts the amount of goods in process, and reduces supervision.

A committee of four, including the plant manager, tours the mill each week. They look for poor housekeeping habits and enter a report on the condition of each department. These reports are printed and displayed in each department.

The mill also runs a training school for loopers in a separate section. Four girls, under one instructor, are in training at all times.

EACH TABLE in the finishing room is devoted to one batch of goods at one time. Each girl performs a different job, and each table is paid as a team.

TRANSFERS are stored on this large wooden wheel in a separate storage section. The wheel is turned for easy access to all transfers.

How Celanese Runs 84-IN. TRICOT BEAMS

• Following the trend toward larger yarn packages, Celanese Corp. is using 84-in. tricot beams and has installed a system of rapidly changing them. The 84-in. beams used at the Bridgewater plant have eliminated beam shafts and reduced beam flanges per knitting set to produce better-quality fabrics.

SINCE SWITCHING over to 84-in.-beams, Celanese Corp., Bridgewater, Va., has found several advantages over the old 42-in. beams. In spite of the 84-in. beams being larger, a handling system has been devised that allows a complete beam change in less time than under the old system where 42-in. beams were used.

Other advantages of the new beams include better-quality fabric because eight flanges on each two-bar set have been eliminated and so bobbin marks and trapped threads have been reduced.

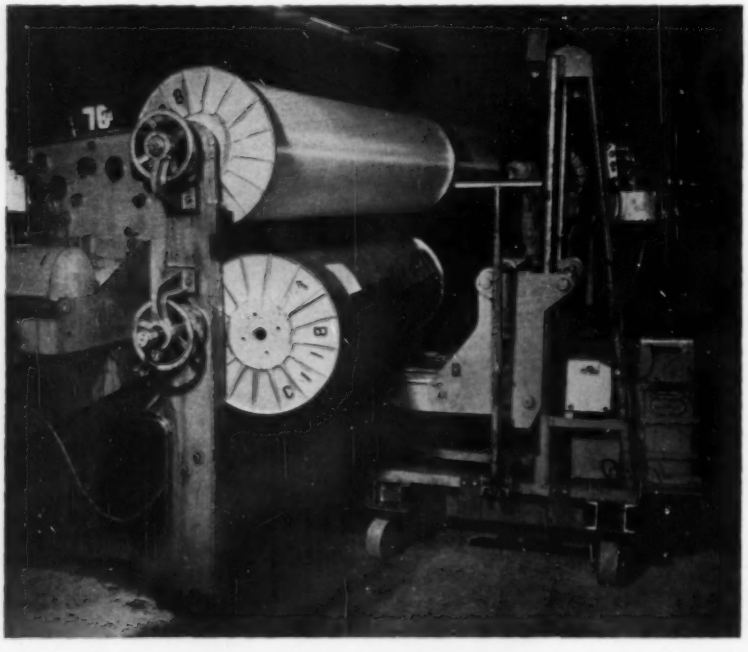
Because the inside measurement of the 84-in. beam is greater than two 42-in. beams, the threads are not so closely squeezed and they run better to the needles.

Threading is made easier because the threads do not have to be taken around the flanges and castings.

Beams Are Warped Directly

The 84-in. beams are warped directly from a 2,400-end creel. Up to 26,000 yds. of 55-den. acetate yarn are warped on 21-in.-dia. spools. Some 14-in.-dia. spools are also warped for machines that do not take 21-in. spools.

The creel is loaded with full 2-lb.



BEAM-HANDLING TRUCK is pushed down the knitting-machine aisles. The 84-in. beams are lowered into place on a curved plate. Top beams are placed into position first when top and bottom beams are changed together.

spinners' bobbins of yarn at one time. The packages run down together so that the package sizes keep identical throughout the run and reduce beam ridges caused by tension variations. This method also eliminates most knots in the yarn.

Full beams are moved to the end of the knitting aisle on a low truck. The required beam is rolled onto a curved plate of a lift truck that is used to place the beams in the knitting machine. The plate is neoprene covered to protect the threads, and it can be raised and lowered hydraulically.

At the present time two men operate the truck to reload warps, but plans are being made to fit a motor to the truck so it can be driven up and down the aisles. One man will then be able to do the job.

The aisles behind the knitting machines are wide enough for the truck to travel safely with the 84-in. beams. The truck is pushed at an angle to the center frame, and the plate is hydraulically lowered until it lines up with the center-pin spline. The beam is then pushed into place under the frame, and the end-frame adaptor is screwed into position.

Except where a 1-to-1-ratio fabric is knitted, individual warps are changed as they run out. Where two warps are changed together, the top one is put in position first when the lift truck is used. When monorail and hoist systems are used, the bottom beams are usually placed first in the knitting machine.

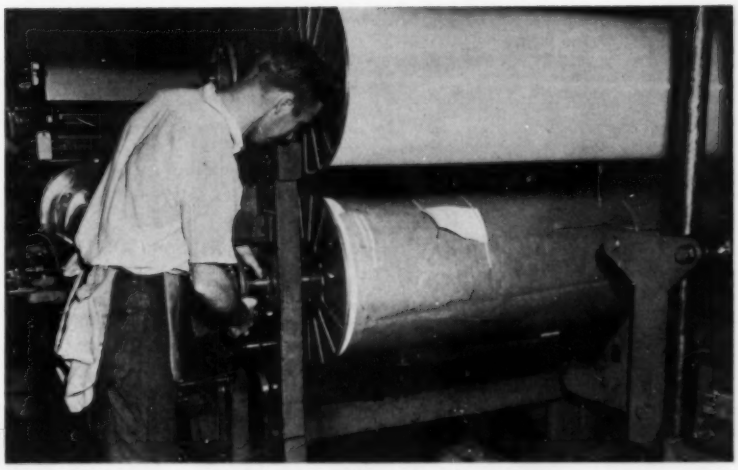
No warp shaft is used. The ends of the beam barrel fit snugly into the adaptors. This technique has not only cut down handling but has reduced weight because the beam shaft used on two 42-in. beams weighs 126 lbs. The 21-in.-dia. spools weigh 113 lbs., and 14-in.-dia. spools weigh 65 lbs. The 84-in. beams have four threaded holes to receive adaptors to eliminate the warp shaft.

Two Girls Thread Machine

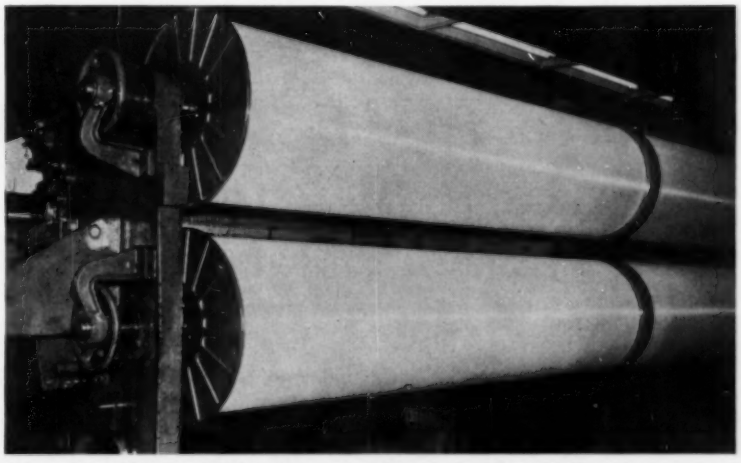
When warps are being changed on only one machine, the two threading girls work together. They move the beam forward under power until the threads are in their correct position.

The tape is cut opposite the bracket, and the threads are laid over the back bar. The girls then cut the tape in 7-in. sections and draw them over the sley bar. One girl then starts at the center and works to the left to draw the threads in the guides while the other girl starts at the right side of the bar.

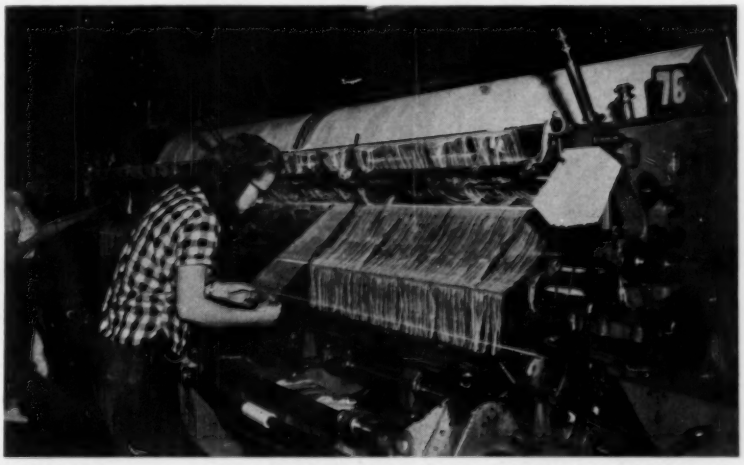
Machine downtime for the removal of run-out warps, cleaning, reloading, threading, and starting of a 168-in. machine averages 2½ hrs.



ADAPTOR is screwed into position while the plate on the truck supports the beam. No beam shaft is used. The adaptor fits directly into the keyed end of the beam barrel to save time and 126 lbs. of weight.

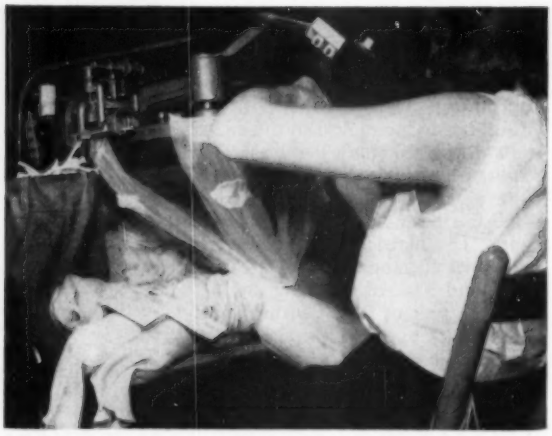


THE 84-IN. BEAMS have improved quality because there are fewer flanges for the yarn to rub on and get trapped than there are on 21-in. or 42-in. beams. The inside measurements are greater, and the threads are not so closely squeezed.



THREADING UP is done by two girls if only one machine is down at one time. One girl works from the center and one girl works from the end. The total beam-changing and threading time is less than 2½ hrs.

KNITTED SLEEVE is drawn on the knitter's arm. The stockings are rolled at the welt, and the sleeve is drawn over the stockings.



TRAY under the looper dial holds three full sleeves. The sleeves are turned down to bare the stocking toes while the toes are looped.

How Richmond Hosiery Reduced PULL THREADS

Picks and pulls are the biggest causes of seconds in most seamless mills. One mill solved the problem by—

- **Placing stockings in a knitted cotton sleeve**
- **Fitting knitting machines with plastic guards**

LIKE MANY MILLS knitting fine-gauge hosiery, Richmond Hosiery Mills, Rossville, Ga., was bothered with seconds caused by pull threads or picks. One of the most difficult stockings to handle without causing pulls was seamless micromesh stockings. Seconds from these faults were quite high until a system was installed to combat the problem.

When the stockings are removed from the knitting machines, they are placed in knitted cotton sleeves. The stockings remain in the knitted tubes until they are turned and inspected.

The sleeves are made from soft-spun cotton yarns on rib machines with about 220 needles. A slack stitch is used to knit the sleeves, which are knitted in 1x1 rib stitch. Several hundred yards are knitted at one time, and the piece is cut into 3-ft. lengths.

Stockings Inspected on a Form

After the knitter has collected stockings from the knitting machines, he lays them on a bench at one end of the alley. Each stocking is then drawn on a black plastic form and inspected on both sides.

While on the form, the stocking is checked for length against marks cut in the form. After a thorough examination, the stockings are laid on the table with the welts all level until the pile contains 1 doz. pairs of perfect stockings.

The stockings are placed in the sleeves in 1-doz. lots. To put the stockings in the sleeves with the least amount of handling, the knitter draws the sleeve on his right forearm. The stockings are then rolled at the welt and grasped in his right hand. The sleeve is drawn down over the stockings with the aid of his left hand until the sleeve covers the entire length of the 1-doz. stockings.

Three full sleeves are tied together with a looper clip, and an identification ticket is tied to the clip. Stockings can now be handled with no fear of rough surfaces to cause pull threads.

The stockings are delivered in the sleeves to the looping section, where they are placed in a tray under the looper dial. The looper operator slides the sleeves down to bare the feet of the stockings.

The toes are looped without taking the stockings from the sleeves. The sleeves lie in the tray while the toes travel around the dial. When the looping operation is completed, the sleeve is drawn back over the stockings and the goods sent to the turning section.

Richmond uses automatic inspecting and turning machines [See TW, Nov. '54, p. 164] that have also helped to reduce pull threads. The sleeves are returned to the knitting department after the stockings are removed.

Plastic Guards Are Fitted

Another source of pull threads was found to be the metal sleeves inside the cylinders of the hosiery machines. The metal sleeves were removed, and plastic sleeves were inserted in their place.

Plastic cups were also fixed to brackets screwed to the left leg of the machine to catch the stockings as they fall from the needles. The plastic sleeves and cups have saved many pull threads, and they took only a few minutes to install on each machine.

How To Dye VICARA and VICARA BLENDS

Dyeing Vicara follows wool procedures generally, but differences in dye absorption rates require careful selection of dyes and in some cases addition of retarding agents

Slight modification of the usual wool-finishing procedures helps maintain a desirable hand

BECAUSE IT IS MADE FROM PROTEIN, Vicara dyes like wool. All the wool colors can be used, including acid, metallized, and chrome dyestuffs. No special procedures are necessary, and the fastness obtained is very close to the fastness of the same dyes on wool.

Dyeing blends of wool and Vicara is not so simple. Although both fibers dye with the same dyestuffs, the rate of absorption is different for each fiber. With many dyes, the wool tends to dye faster than the Vicara and poor unions are the result.

However, by careful selection of dyes, good union dyeings are possible. Many of the colors in common use can be used on this blend satisfactorily. Selected acid, neutral-dyeing metallized, chrome, or metallized colors are being used for a complete range of shades.

In blends with cotton or rayon where the fibers require different classes of dyestuffs, little difficulty is encountered in getting satisfactory union shades. It is also a simple matter to dye one fiber and leave the other white or to dye the two fibers different colors. There is a wealth of information on blends of rayon or cotton with wool that can be directly applied to the Vicara blends of the same type.

Orlon and Vicara require basic or modified-basic colors for the Orlon and acid colors for the Vicara. By selecting those basic colors that stain Vicara only lightly, satisfactory one-bath dyeing formulas have been developed and are working very well.

Acrilan and Vicara blends are also being dyed satisfactorily in a one-bath method through selection and balancing of dyestuffs.

Nylon and Vicara blends offer no problems. One of several available chemicals added to the dyebath will help produce good unions on both the normal- and the fast-dyeing types of nylon.

Dacron and Vicara can be union-dyed in one bath with proper selection of dyestuffs. Dowicide A as a carrier for the Dacron and diammonium phosphate for the Vicara work together very well to produce good unions on these fibers.

Blends of Vicara with the newer man-made fibers, with the exception of nylon, can be cross-dyed as well as dyed in union. Vicara is considerably more resistant than wool to acids, alkalis, and heat. Normal finishing procedures that can be used on wool can be safely used on Vicara. Fulling, scouring, carbonizing, and high-temperature processes such as curing can be used on Vicara fabrics without difficulty.

Modify Finishing Procedures

Vicara does not full because it is a smooth-surfaced fiber, but in fulling blends of wool and Vicara, the presence of the Vicara tends to speed up the fulling process. Therefore, these blends should be fulled cautiously or there may be a tendency to over-full. Although the Vicara does not full of itself, the strength of the fulled fabric is satisfactory. Nonwoven felts containing 40% Vicara have been produced that are stronger than all-wool felts.

Full decating or hard pressing may tend to produce stiffness or boardiness in Vicara blends. Light semidecating or moderately light pressing will prevent this. Boardiness can be counteracted by dry working or flexing.

Finishing Vicara blends with cotton or rayon requires a few precautions if the best qualities of Vicara are to be maintained.

Resins used in finishing Vicara blends tend to mask the soft hand of Vicara, and they should not be used where hand is important in the finished fabric.

For the same reason, warp sizing must be removed completely because even small quantities of residual size will give the fabrics a poor hand.

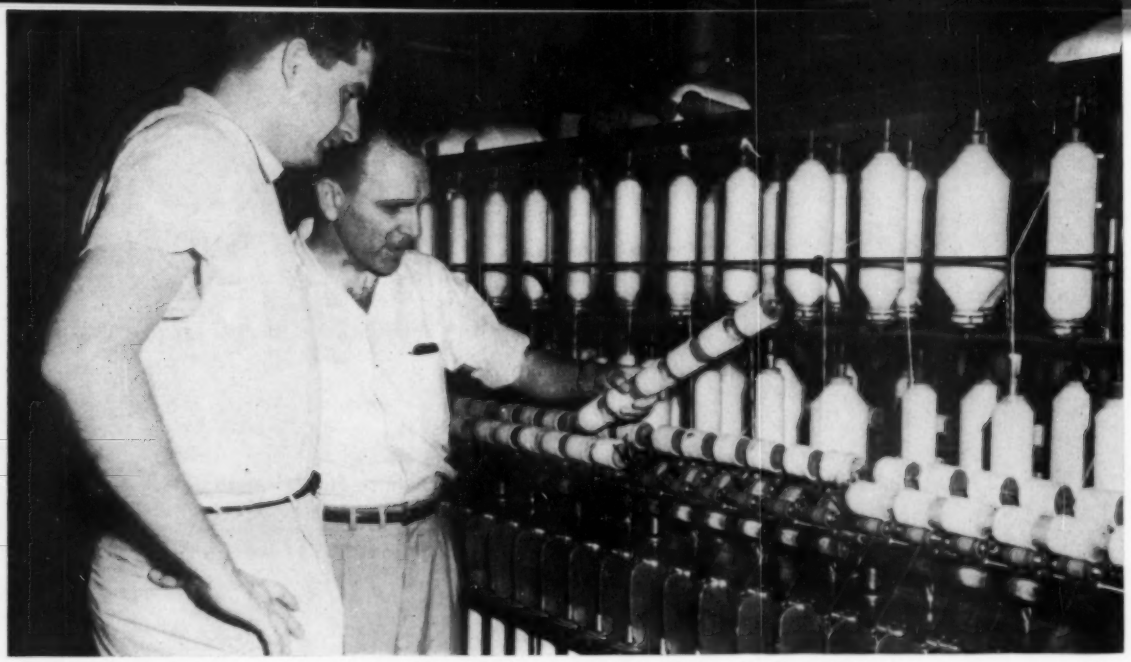
The Sanforized or the Avcoset type of finish give good dimensional stability.

High-Bulk Effects Possible

Vicara is being blended with heat-stretched Orlon or Acrilan where it acts as the unstretched portion of the blend. When these fabrics are finished and the stretched fibers pull in to bulk the fabric, the stretched fibers tend to go to the core of the yarn, leaving loops and ends of Vicara on the surface where its softness and comfort become prominent.

In this connection, it should be remembered that the proportion of heat-stretched fibers in the finished yarn should be the same as it is in, for example, a 100% Acrilan or Orlon yarn.

From a paper presented by Alfred Greenfield, Director, Fabric Development, Virginia Carolina Chemical Co., at a recent meeting of AATT.



REVOLVING-CLEARER GROOVES are cleaned every 24 hrs. by special clean-up hands. The supervisory staff frequently checks on the cleaning operations.

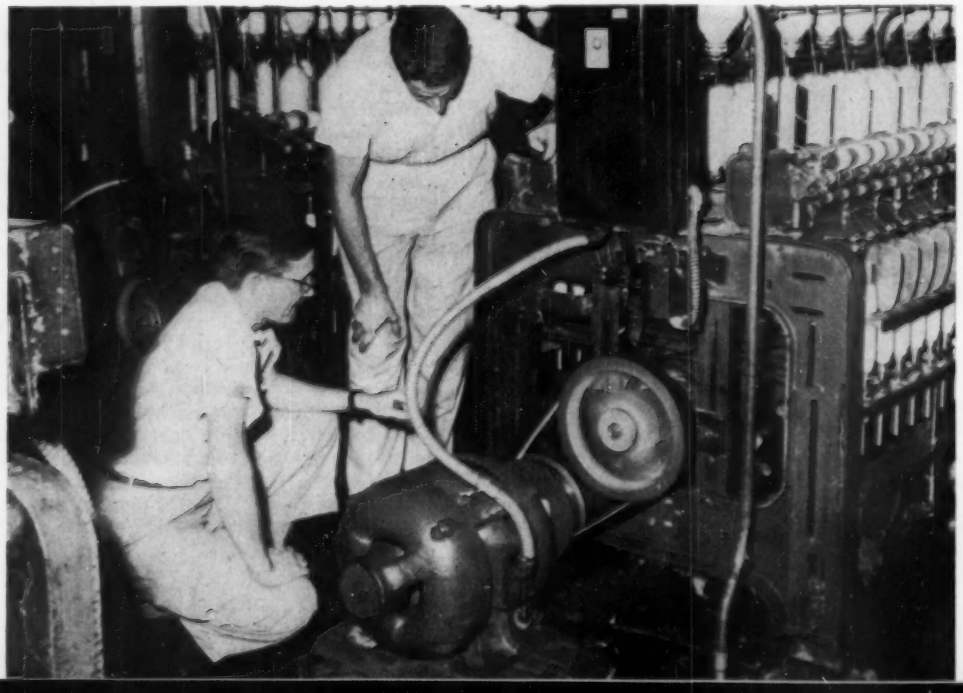
How Chiquola Increased PRODUCTION PER SPINNER

This broadcloth and print-cloth mill increased warp spinners' work assignments by—

- Changing over to large packages
- Adding roll pickers and clean-up hands
- Revising cleaning schedules

By **WILLIAM G. ASHMORE,** Associate Editor, TEXTILE WORLD

VARIABLE-SPEED DRIVES have been made standard equipment on the modernized warp frames. Front-roll speeds were increased from 133 to 138 rpm.



WARP SPINNING FRAMES, which run at 97% efficiency since they were modernized, are blown off only when the mill is shut down.

IMPROVEMENTS IN THE SPINNING DEPARTMENT of Chiquola Mfg. Co., Honea Path, S. C., include the conversion of 108 Whitin 276-spindle warp frames to larger packages. Immediate benefits were decreased cleaning, increased work assignments, and improved quality.

Ring size was increased from 1⅞ to 2 ins., and the 9-in. bobbins were replaced with 10-in. paper tubes. The tubes hold 7,000 yds. of 31s warp, compared with 5,400 yds. spun on the old bobbins. Spinning is from 2.00-hk. roving.

The old spindles, which operated at 10,300 rpm., were replaced with ball-bearing spindles. Speed of the new spindles is the same as that of the old. Front-roll speed, however, was increased from 133 to 138 rpm.

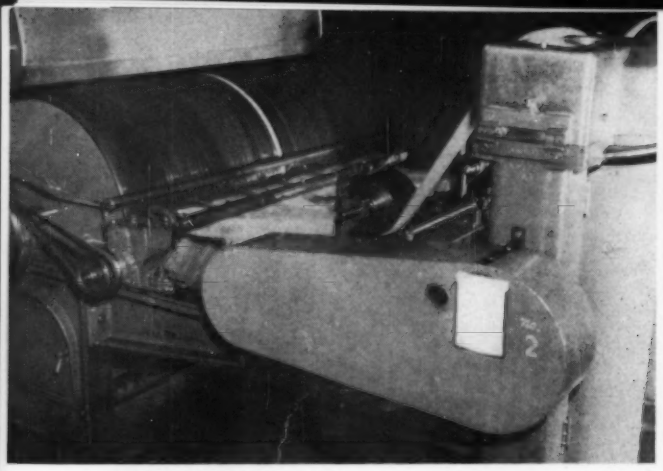
Ends Down Reduced

Twist multiplier is now 4.12, compared with 4.38 before the change-over. Break factor is 2,200, compared with 1,950. Ends down were reduced from 40 to 26 per thousand spindle hours. The modernized frames run at 97% efficiency, compared with their former efficiency of 93%. The larger packages increased the doffing interval from 8 to 10 hrs.

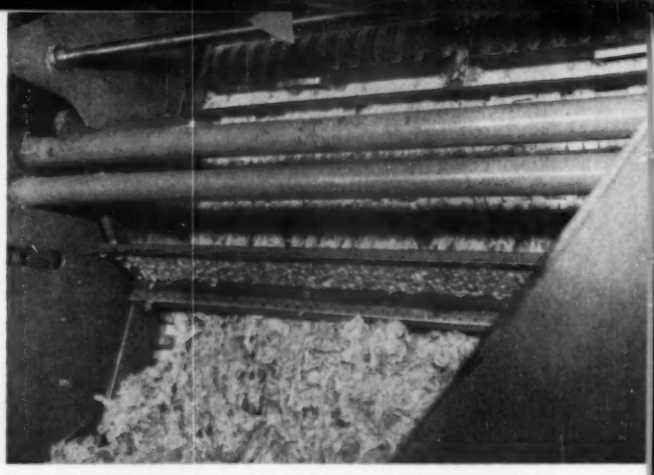
The mechanical changes, plus the addition of roll pickers and clean-up

CONTINUED ON PAGE 198

THE CONTROL BOARD, located in the laboratory, enables the management to check at a glance the efficiency of all departments



STATIC BAR across the doffer helps keep wild fibers under control. Cards deliver 150-grain sliver.



MAGNET on feed lattice (arrow) removes metal trash from stock-dyed material. Blend is 15-den. rayon and nylon.

Chatham Uses a New System For CARPET YARNS

An unusual combination of worsted and cotton machinery, which produces 0.95/1 rayon-and-nylon-blend carpet yarn with excellent evenness and bulk, consists of—

- **Worsted cards**
- **Pin drafters**
- **Long-draft roving frames**
- **Cone winders**

By JAMES H. BLORE, Associate Editor, TEXTILE WORLD

Chatham Mfg. Co., Elkin, N. C., produces a wide variety of yarns in its worsted division for use in blankets, automobile fabrics, and tufted carpets. Most of the stock run is synthetic. Up to 30,000 lbs. of tufted carpet yarn is produced weekly.

A worsted card is used to put the stock in sliver form. Two pin-drafter operations are followed by roving and spinning done as a single operation on roving frames.

The stock is cut into 3-in. staple lengths and blended in Chatham's woolen division to produce a blend of 90-10 rayon-nylon. All filament sizes are 15 den. The material is stock-dyed and blended in seven colors.

There are four Proctor & Schwartz cards arranged along one end of the carding and drawing section. Single-cylinder units are used to run the material for carpet yarns.

To guard against damage to the cards, Chatham has fixed Eriez spiked-apron magnets close to the feed lattice on each card. The magnets are nonelectric, and they swing against an angle-iron rail screwed to the card frame.

Nails, bale ties, and other dangerous iron and steel parts that are attracted to the face of the magnet are removed once during each shift or at each change of stock. This work is done by the card tender, who swings the magnet from the spiked apron and runs his hand along the magnet.

When the cards are switched to the 15-den. rayon-nylon blend, the lickerin and transfer rolls are slowed down to take the bulkier stock more smoothly. The cards are set to deliver 150-grain sliver.

A static eliminator is fixed across the width of each doffer just above the doffer comb. Little static trouble occurs, however, in processing the carpet-yarn material. Relative humidity is kept at 50% in the carding section.

The card tender checks the weight of sliver from each card every 2 hrs. The tolerance on carpet-yarn sliver is 5 grains.

Pin Drafters Take Seven Ends

Warner & Swasey pin drafters are used to further blend the fibers and to make them parallel. At the first pin-drafter operation, seven ends of the 150-grain card sliver are fed to the pin drafter.

A 32-tooth draft gear is used to give a draft of 9 to 9.3. Pinning on this first operation is 15 teeth per inch. A 90-grain sliver is delivered. Sliver is fed into 15x36-in. cans at the card and both pin-drafter operations. The quality-control department checks sliver from the pin drafters once a day.

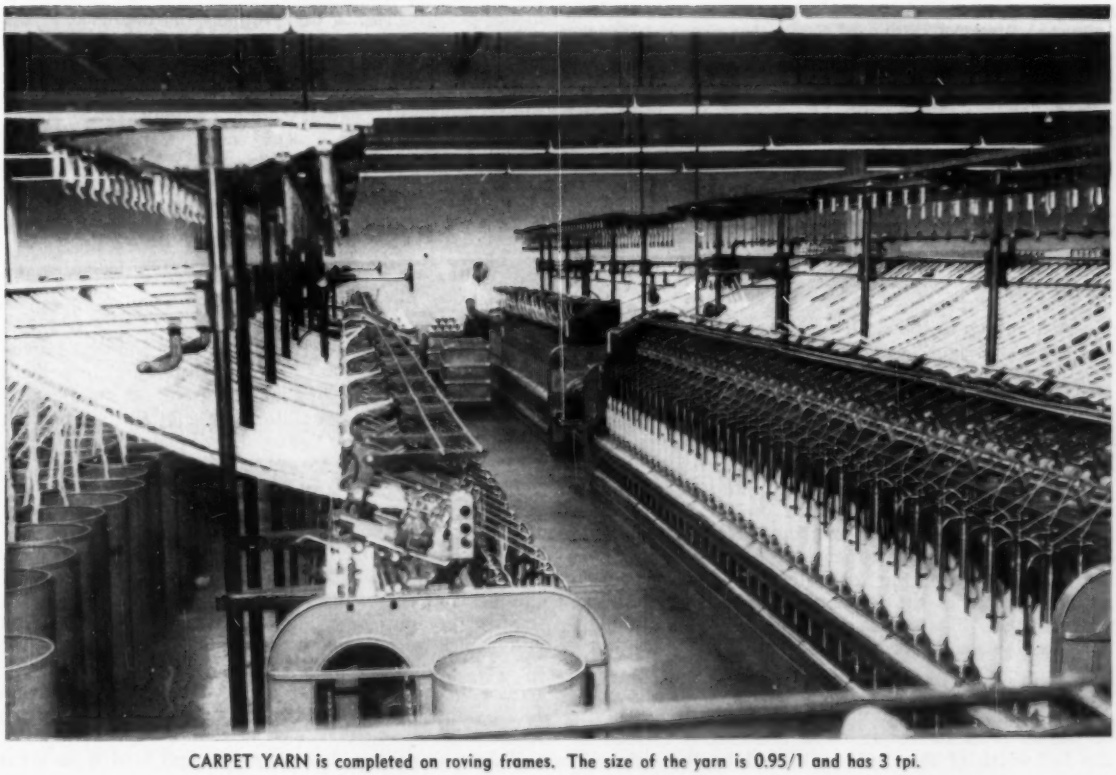
The pin-drafted stock is then processed on 10x5 FS Saco-Lowell roving frames. One end is delivered to each spindle to produce 0.95/1 yarn with 3 tpi.

To obtain this twist, the spindle speed is boosted to 1,150 rpm. and the front-roll speed dropped to 60 rpm. The front roll is 1 1/8 ins. in diameter, and a depression roll is used behind it.

About 2 lbs. of yarn is spun on each roving bobbin, and the time between doffing periods is about 3 hrs.

Foster winders are used to put the yarn on jumbo cones ready for the tufting machine. To control the large balloon from the roving bobbin, empty roving bobbins are placed between the full bobbins on the creel. The yarn is wound at 325 yds. per min., and 8 lbs. of yarn is put on each cone for shipment.

PIN DRAFTERS blend and parallel carded sliver in two operations. Seven ends are fed to each pin drafter head.



CARPET YARN is completed on roving frames. The size of the yarn is 0.95/1 and has 3 tpi.

Here's How a Flannel Mill Analyzes CLOTH SAMPLES

• For the small flannel mill without a full-time designer, the analysis of cloth samples can be a time-consuming chore. By the use of simple rules and formulas, almost anyone can easily and quickly analyze these samples.

By GUS GUGGENHEIM

THE COTTON MILL that specializes in weaving flannels and other soft-filled sheetings has a need for quick, accurate, and inexpensive cloth analysis. It is necessary to make frequent analyses because of the many different styles, naps, and finishes used for flannel. Other factors are the wide variety of end uses and the short seasons of most flannel goods.

By the use of the analysis form shown and only the most rudimentary equipment, almost anyone can determine the information necessary to duplicate a sample. While not absolutely accurate, this procedure is highly useful. The information gained from such analysis is an effective guiding tool for the sales department, particularly if there is no design department in the organization.

The equipment needed is: (1) steel tape, (2) scissors, (3) 4x6-in. cardboard rectangle, (4) grain scale or balance, (5) metal or cardboard swatch template, (6) Scott strength tester, (7) pick counter, (8) thickness gauge, and (9) cloth pencil. An electric calculator is desirable but by no means necessary to the operation.

How Analysis Is Made

After the date and description of the sample have been filled in on the analysis form, the first subject for consideration is the cloth width. If the sample is full width, lay it evenly on a flat surface, without stretching, and measure the width with a steel tape. If the sample is not full width, this information will have to be furnished by the sales department.

The next step in the cloth analysis is the determination of the cloth weight or the number of yards required to weigh one pound.

The metal or cardboard template is used for this purpose. It is desirable to have the template in the form of a square. The template can be of any dimensions, but it is best to have squares of 2 ins., 4 ins., and 6 ins., because the samples to be analyzed are often quite small.

The template should be placed on the sample on a flat surface. A line is then marked on the cloth around the template with a cloth pencil. The line is drawn on the outside edge of the template; therefore the swatch should be cut with the scissors held on the inside of the penciled lines. The swatch is then weighed on the grain scale and the weight recorded on the analysis form.

Constants Are Used

A mathematical constant is easily figured for each size of swatch prior to testing. The constant is divided by the full width of the cloth multiplied by the weight of the swatch. The resulting figure will be the yards per pound of the fabric. This formula is expressed as:

$$\frac{\text{Constant}}{\text{Width} \times \text{weight of sample}} = \text{yards per pound}$$

If the pounds-per-yard figure is required, the reciprocal of the yards per pound is taken and is equal to pounds per yard, as:

$$\frac{1}{\text{Yards per pound}} = \text{pounds per yard}$$

To find the number of yards of cloth necessary to weigh one pound, proceed as follows:

Multiply the length of the swatch by the width of the swatch, and multiply this number by the number of grains per pound. Divide the total product by the number of inches per yard, times the width of the cloth, times the weight, in grains, of the swatch. The mathematical formula would be stated as:

$$\frac{\text{Length of swatch} \times \text{width of swatch} \times \text{grains per pound}}{\text{Inches per yard} \times \text{width of cloth} \times \text{weight of swatch}} = \text{yards per pound}$$

For a 2-in. swatch, the formula would be:

$$\frac{2 \times 2 \times 7{,}000}{36} = 777.77 \text{ constant, and}$$

$$\frac{777.77}{\text{Width cloth} \times \text{weight swatch}} = \text{yards per pound}$$

Constants for other dimensions of cloth samples are figured in the same way. The constant for use with the 4-in. square template is 3,111.11, and the constant for the 6-in. square is 7,000.00. A rectangular template perhaps 1 in. wide and 10 ins. long may be useful for samples that are only narrow strips of cloth. The constant is figured in the same manner as for the square templates, as:

$$\frac{1 \times 10 \times 7000}{36 \times \text{width} \times \text{weight}}$$

How the Sample Is Handled

Count the number of both warp and filling ends per inch in the swatch with an ordinary pick counter. Record the pick and sley on the analysis form.

Strip the warp or filling from the cloth, pulling each end or pick from the cloth separately. Do not lose a shred of fiber because any small loss of weight will considerably reduce the accuracy of the results. Weigh the warp and filling yarns separately, and enter the figures on the analysis form.

Take a single strand of warp yarn and hold it on a flat

surface; then gently pull the yarn until all crimp is removed. Do not stretch the yarn. Measure several strands, and compute the average to get a more-accurate figure. Enter this average on the analysis form. Use the same procedure for the filling yarn.

How Calculations Are Made

All the information needed to determine the counts of warp and filling is now available. The warp count is the result of the number of grains per pound, times the ends per inch, times the length (warpwise) of the sample, times the length of the warp yarn less the crimp or contraction, divided by 840 (yards of 1s yarn per lb.), times the number of inches in one yard, times the weight of the warp yarn, times a correction factor for sizing compounds (usually about 10%), or:

$$\frac{7000 \times \text{length sample} \times \text{ends per inch} \times \text{length warp less crimp}}{840 \times 36 \times \text{weight warp in grains} \times (100\% - 10\%)}$$

The same procedure is followed for determining the filling counts with the exception of the correction for sizing compounds. A figure can be used to correct loss of weight in the filling through the action of the napper, but such correction would be more or less guesswork.

The percent of warp and filling in the sample of cloth is easily found when the square template is used. The weight of either the warp or filling is divided by the total weight of the sample and multiplied by 100%. Stated in mathematical form:

$$\frac{\text{Weight warp (gr.)}}{\text{Weight sample (gr.)}} \times 100\% = \text{percent warp}$$

$$\frac{\text{Weight filling (gr.)}}{\text{Weight sample (gr.)}} \times 100\% = \text{percent filling}$$

When the rectangular template is used, the method is more complicated. Basically, the weight of the warp and the filling must be proportioned on a prorata basis according to the area covered by each. For accurate results, the square swatches should be used whenever possible.

Use Ten Samples

There's a space on the analysis form to record the strength and gauge of the sample. For accurate results, five samples each of warp and filling are needed. If enough cloth is available, the following procedure should be followed:

1. Fold the sample once, with the fold running fillingwise.

2. Using a cloth pencil, mark off five 4x6-in. samples of cloth, both warpwise and fillingwise.

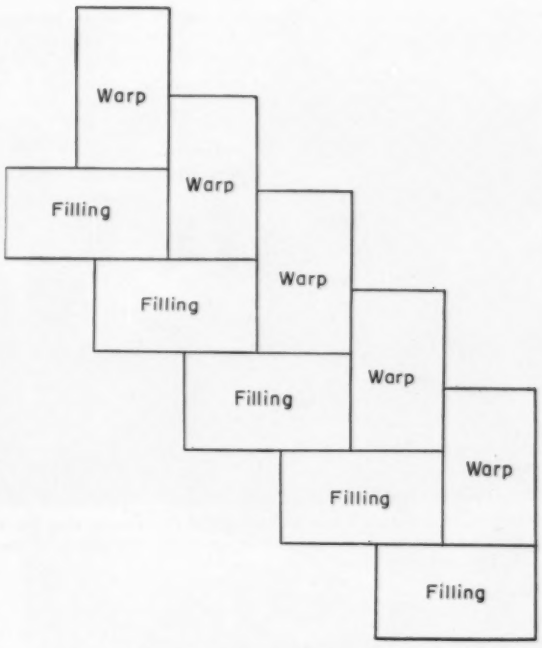
Specifications of ASTM are for all the samples to contain different warp and filling yarns. An easy way to meet these specifications is to mark off the samples as if the profile of a stairway were being drawn. By placing warp above filling in sequence, a minimum of cloth is used and cutting time will be shortened. The cloth can be folded so that making five cuts actually gives 10 swatches. Also, all samples have different warp yarns and different filling yarns in them, and they are all 4x6 ins. as prescribed by ASTM.

Gauge five of the warp samples and five of the filling samples, and record the average of these gaugings with the results of the strength tests in the space provided on the analysis form.

The analysis of the cloth is now completed, and all pertinent information is recorded for easy reference.

The completed forms will be useful for keeping a permanent record of cloth characteristics and for setting up standards for the manufacture of cloth. These completed forms will also be useful to the sales organization for quick analysis of competitors' goods and for a comparison on one's own fabrics against a competitor's fabrics.

Although some of the formulas look complicated, this type of cloth analysis is really very simple and any office worker should be able to do it with very little training. Thus the production supervisor is relieved of this necessary and time-consuming chore.



CUT 10 SWATCHES LIKE THIS from a single piece of cloth. Each of the 4x6-in. samples will contain different warp and filling yarns.

CLOTH-ANALYSIS FORM

Date_____

Sample_____

	Tensile strength		
	Filling	Warp	Gauge
Width			
Wt. swatch			
Act. yds/lb.			
Theo. yds/lb.			
Wt. warp			
Wt. filling			

Total Mean

Length warp (less crimp)_____

Length filling (less crimp)_____

Picks/in._____

Ends/in._____

Warp count $= \frac{7000 \times \quad \times \quad \times}{840 \times 36 \times \quad \times}$

$=$ _____

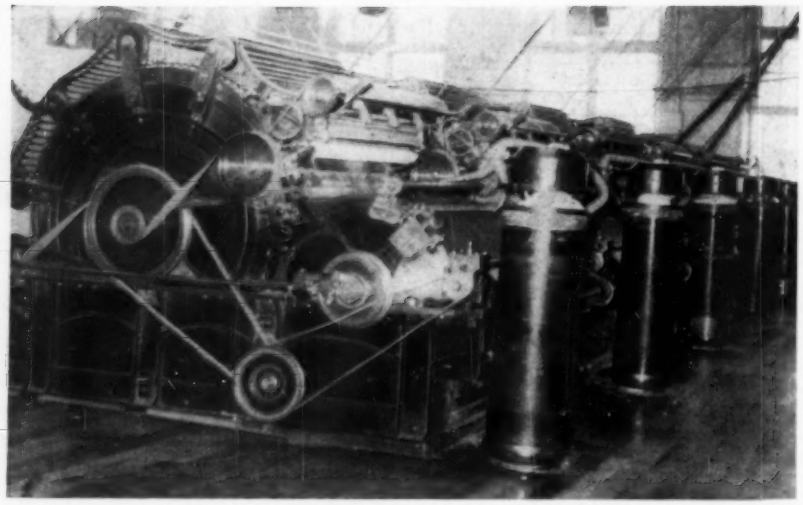
Filling count $= \frac{7000 \times \quad \times \quad \times}{840 \times 36 \times \quad \times}$

$=$ _____

% Warp = _____ x 100% = _____

% Filling = _____ x 100% = _____

Total



CARDS are now laid out lengthwise instead of crosswise as they had been. Card tenders don't have to carry laps farther than the width of six cards. The piping of the waste-removal system is now under the card-room floor.

Poe Mfg. Co. MODERNIZES

A modernization program at Poe has resulted in—

- **One card room replacing two**
- **Underfloor card-stripping piping for card room**
- **Conveyor system carrying material from cards through drawing**
- **New weave room with wood floor, glazed-tile walls, and strip lighting**

By MICHAEL LONDON

MODERNIZATION has brought some broad changes at F. W. Poe Mfg. Co., Greenville, S. C., during the past year. The card room has been completely rearranged with a different layout of cards, and subsequent changes were made in the vacuum waste-removal system. Materials handling has been mechanized by conveyors running from the cards through drawing. A program is in effect in the spinning room to change all plain-bearing spindles to the antifriction type.

Poe increased its number of cards from 162 to 192. The complete carding operation, which used to occupy two separate rooms, is now in one room. This grouping of an operation in one concentrated area allowed the mill to take advantage of better-laid-out job assignments.

Cards are now laid out lengthwise instead of across the card room as they had been. This move left the alleys with room enough to permit installation of the largest-size roving cans available. The card arrangement is such that the card tenders don't have to carry the laps farther than the width of six cards.

Cards are arranged 12 per line across the width of the room. This arrangement made additional room available, improved the flow of material, and lowered processing costs.

The Abington system of piping for card strips is now under the card-room floor instead of overhead as it had been. When the cards were rearranged, the piping also required rearranging. The difference in costs between overhead and underfloor piping was so small that Poe chose to install the latter. With the old lint-collecting overhead pipes gone, the card room is cleaner and more attractive. The cost of cleaning is also cut down. The piping is now located on the weave-room ceiling, one floor below. The pipes are painted to be practically unnoticeable, and they are too close to the ceiling to collect lint.

To Combers via Conveyor

Card sliver is fed to a sliver lapper nested in the center of a group of cards. The sliver laps are carried by a conveyor to a ribbon lapper. After combing, the combed sliver is again put back into lap form on a sliver lapper; and an automatic conveyor then takes the lap to drawing and roving.

Roving goes to the spinning room by trucks on an elevator.

The spinning room has 78,400 spindles. All frames have Parks-Cramer overhead cleaners and Whitin

Super-Draft drafting elements. There is a program in effect to change all spindles from plain to antifriction bearings. Poe has found that the antifriction spindles require less maintenance and produce better-quality yarn.

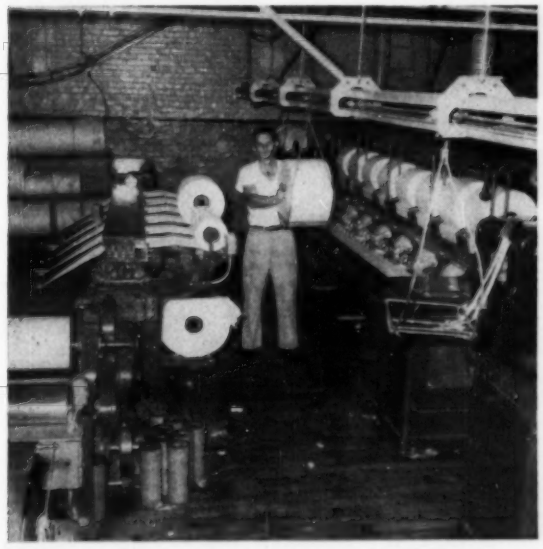
The floor space in the spinning room has been increased one-third, and the additional space has been filled with filling spindles.

Yarn from the spinning room is fed to Barber-Colman Type C spoolers and warpers running 900 yds. per min. Slashing equipment has been modernized with control equipment. There are four slashers, each with multimotor drives.

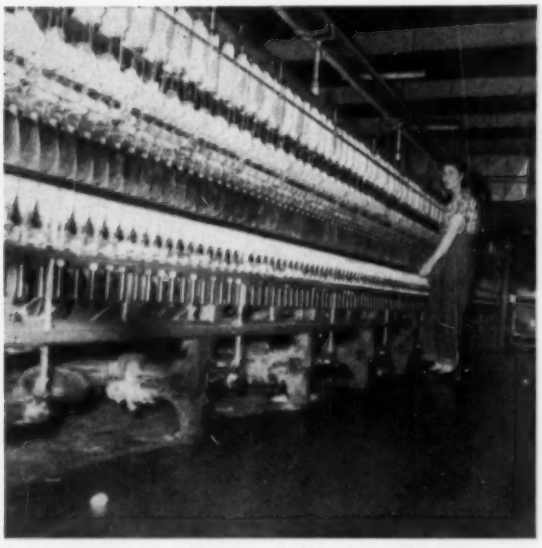
A new addition was constructed for 600 X-2 looms. Construction features include glazed-tile walls, maple floor, and an insulated wood-decked roof.

Strip fluorescent tubes furnish 30 ft.-c. at loom level. The combination of glazed-tile walls and strip lighting gives a well-lighted room. The tile walls are also expected to cut maintenance costs substantially because the need for painting is eliminated.

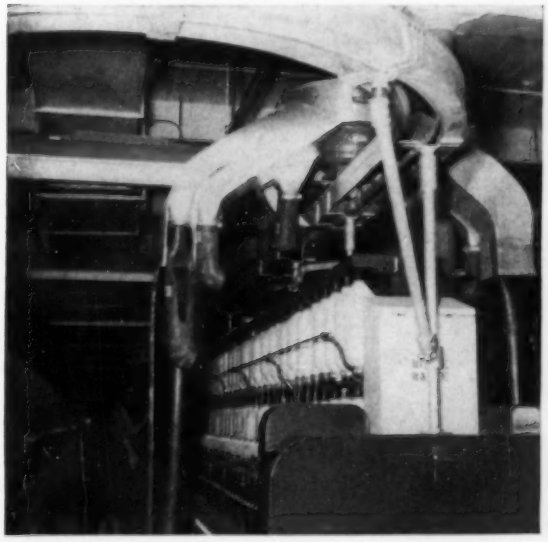
Poe, with a total of 1,665 looms, manufactures products ranging from carded corduroys to combed lawns from 23s carded to 85s combed yarns.



RIBBON LAPPER receives laps from sliver lapper nested in the center of a group of cards. After combing, the sliver again goes to a sliver lapper, and an automatic conveyor carries the lap to drawing and roving. J. J. Mintz is handling the lap.

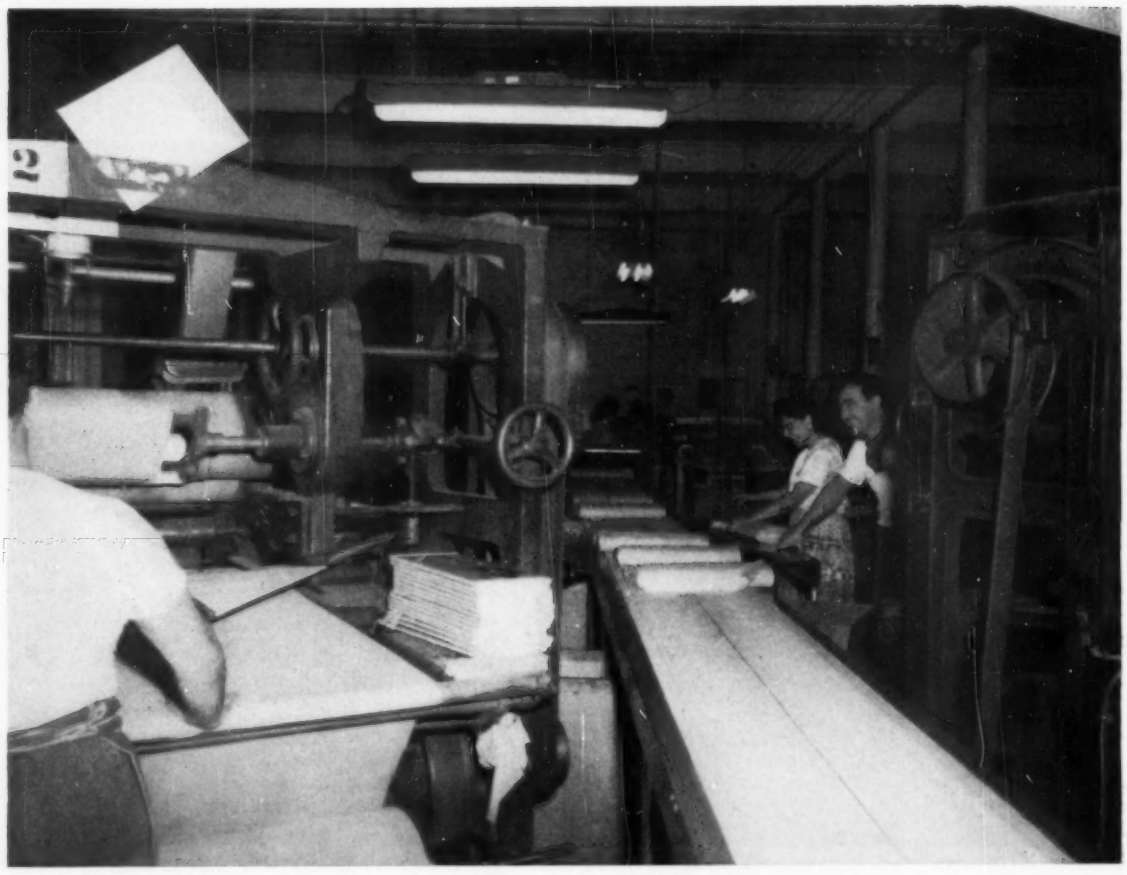


SPINNING FRAMES are being changed from plain-bearing to antifriction spindles. Poe has found that the antifriction type requires less maintenance and produces better-quality yarn. Etta McCall is running this frame.



OVERHEAD CLEANERS are used with all spinning frames. This cleaner has blowing points at four levels to keep all parts of the frame, including the top of the creel, clean. Poe's spinning department has 78,400 spindles.

NEW WEAVE ROOM contains 600 X-2 looms. Construction includes glazed-tile walls, wood floor, and a wood-decked roof. Strip fluorescent tubes furnish 30 ft.-c. at loom level. The tile walls are expected to cut maintenance costs.



CONVEYOR takes doubled pieces to wrapping machines. If special tickets are required, the girl applies them to the pieces as they travel by.

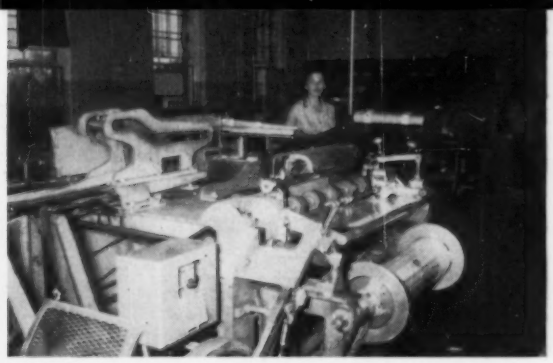
How Pontiac Streamlined Its DOUBLING Operation

Pontiac Div., Fruit of the Loom, Inc., applied assembly-line methods to its doubling operation, added automatic wrapping machines, and came up with—

- Higher production
- Lower costs

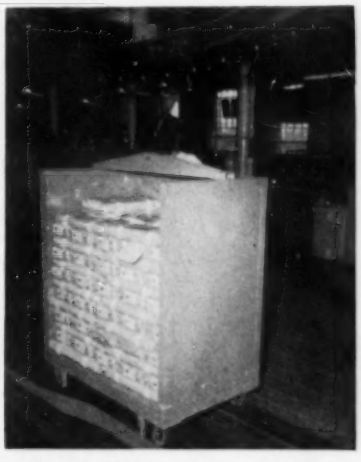
By **ROBERT W. PINAULT,** Assistant Editor, TEXTILE WORLD

SKILLED DOUBLER can produce 750 to 800 pieces per day. Doubling machines are set at a 45° angle to conveyor to eliminate all possible waste motion.

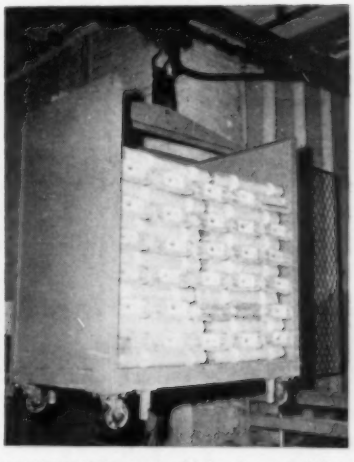


WRAPPING MACHINE—one of two—is fed by operator who diverts cuts from conveyor to the proper machine. Each machine is set to wrap a different-size cut.

WRAPPED PIECES come off the roller conveyor and are stacked by lot in special trucks fitted to be transported by an overhead conveyor to the shipping room.



PICKUP STATION under conveyor is close to the doubling and wrapping operation. Hooks engage a link on the truck yoke, and the conveyor hauls the truck to the shipping room.



ON ITS WAY—truck will be disengaged from conveyor hook when it reaches the shipping room. Conveyor is two-way; so empties are returned by the same method.

DOUBLING, WRAPPING, and getting the invoiced pieces to the shipping platform have been put on a real production basis at Fruit of the Loom's Pontiac Div., Pontiac, R. I. Doubling is a large factor in the finishing operation at this plant; so considerable thought went into making it as efficient as possible.

The first step in setting up the doubling operation was to arrange the seven doublers in two rows at a 45° angle to a conveyor belt. This conveyor feeds onto two roller conveyors connecting with two Hayssen automatic wrapping machines. The wrapping machines are set for two sizes of cuts to take care of normal variations in the size of different pieces. Cellophane stock printed with the Fruit of the Loom trademark and false bands is used to wrap the pieces.

The doubling machines are supplied by one operator who does nothing else. The doubler operators work on a piece-rate basis and have become very adept at their work. The combination of incentive pay and proper machine placement that eliminates waste motion pays off for operator and company alike. A doubler can remove a full cut, make a note of the yardage, attach a new board, and start up again in 8 to 10 secs. Production per machine will run 750 to 800 pieces per day under the system now in effect.

Clerical Work Simple

One girl stands at the delivery end of the belt conveyor when all doublers are running and diverts the cuts to the roller conveyors feeding the wrapping machines. She judges the size of the cut and directs it to the machine set for that yardage.

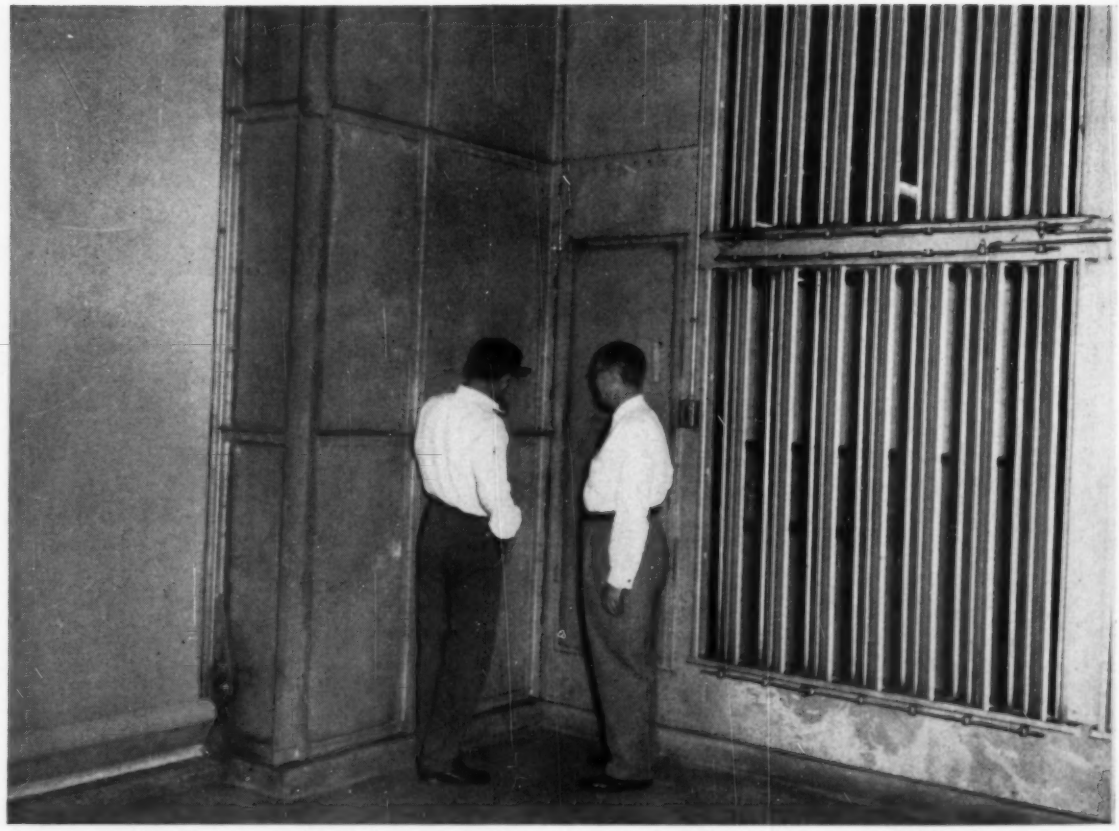
As the piece rolls down the conveyor, another operator replaces the doubler's yardage note with a stamped tag, adds any other special tags, and lets the pieces go into the wrapper.

The wrapper delivers the wrapped cut onto another conveyor from which it is picked up by an operator and placed in a special box truck.

The trucks used for doubled goods have an open side and a yoke overhead that can be hooked onto a two-way conveyor. The conveyor runs between the finishing department and the packing and shipping department.

When a truck load has been invoiced, it is wheeled into an area under the conveyor and an operator lifts a link on the truck yoke to engage a conveyor hook as it comes along. Empty trucks are returned to the department in the same way.

The entire operation of doubling, wrapping, invoicing, and delivery to the shipping department is impressive because it flows smoothly with a minimum of physical effort. Elimination of waste motion and mechanization have paid off at Pontiac.



OUTSIDE AIR enters through the louvers in the right wall and passes through filter paper on the left wall.

How Johnston Cleans and Cools SPINNING-ROOM AIR

A central-station electrostatic air-conditioning system cleaned up dirty yarn and improved workers' efficiency at Johnston Mfg. Co., Charlotte, N. C. Results have been—

- **Comfortable working conditions**
- **Less labor turnover**
- **Reduced cleaning time**
- **Increased machine efficiency**

By **WILLIAM G. ASHMORE,** Associate Editor, TEXTILE WORLD

IMPROVED YARN QUALITY, fewer seconds, decreased labor costs, and reduced machinery maintenance have resulted from the installation of an air-cleaning-and-refrigeration system at Johnston Mfg. Co., Charlotte, N. C.

Located in the outskirts of Charlotte, the mill is exposed to soot- and smoke-laden air in the winter and to a hot Southern sun in the summer.

Dirty air entering all departments lowered the quality of the sales yarn being spun; and excessive heat during the summer months lowered the efficiency of the operators.

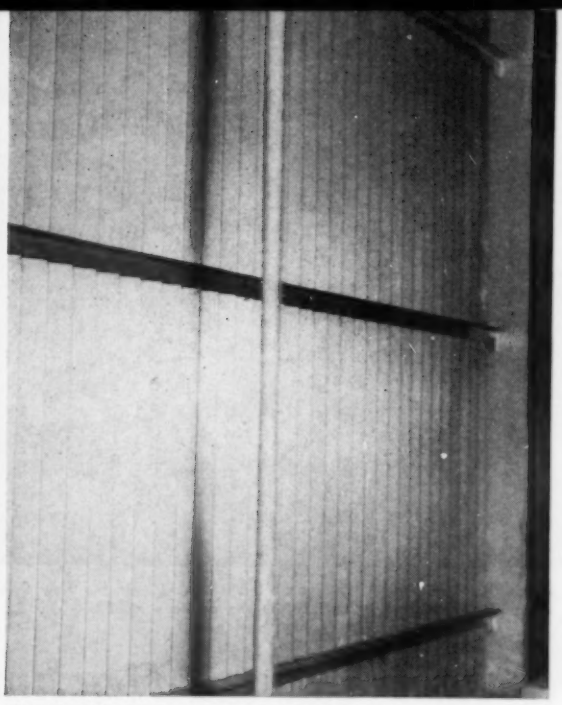
In the fall of 1955, the mill decided to go all out and install central-station air conditioning that would take care of all its air problems in one package. Bahnson Co. was selected to engineer and install the equipment. Here's how the system is set up and operates:

Outside air enters a 12x18-ft. air chamber through large openings equipped with aluminum louvers that can be adjusted as required.

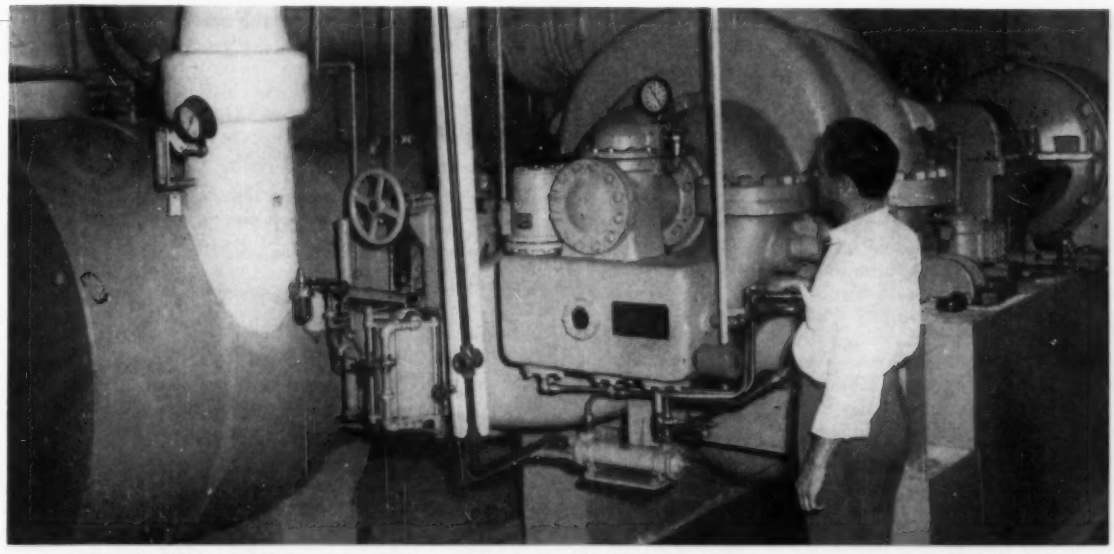
Dirt Is Removed

A large fan pulls this air at 83,700 cu. ft. per min. through a bank of American Air Filter Co. paper filters, where the larger particles of dirt are removed. Next, an Electro-Matic pre-

FOREIGN PARTICLES are stopped by a high-voltage screen on the opposite side of this oil filter.



CLEAN AIR passes through refrigerated water during the hot summer months.



REFRIGERATION MACHINE, rated at 465 tons, cools 1,415 gals. of water per minute to reduce air temperature to 78° F.

cipitator "burns" any particles that get through the filter paper. A loud snapping sound can be heard when a particle of foreign matter hits the highly charged screen.

The air then passes through an oil filter and finally is washed in cold water by a Bahnson Type-Y air washer equipped with stainless-steel baffles and eliminators mounted over a concrete tank.

The water used is first cooled in an outside tower with a capacity of 1,400 gals. per min. The tower, supplied by Water Cooling Equipment Co., has an induced draft produced by a fan and a 25-hp. motor. The water is then refrigerated in a 465-ton Worthington centrifugal refrigeration machine that has the capacity to cool 1,415 gals. per min. from 54.7° F. to 46.8° F.

Aluminum duct work supplies the spinning room with 47,900 cu. ft. of clean, refrigerated air per minute; slubbing, spooling, and storage receive 35,800 cu. ft. per min. The card room receives 57,900 cu. ft. per min. of filtered air through a separate fan-and-duct system.

Year-around temperature in all departments is 78° F., and relative humidity is 50%.

HIGH-PICKAGE TARPAULINS have been in service at the New Orleans professional baseball park for five years. One tarpaulin covers the batter's box, and another covers the pitcher's mound.

SRRL Loom Attachment Makes WEATHERPROOF FABRICS

• New improvements on the SRRL high-pickage loom attachment make the attachment easily adaptable to several types of looms. Now the attachment can be powered with an overhead drive in addition to the cam drive.

By **MAYER MAYER, JR.,** Southern Regional Research Laboratory

The high-pickage loom attachment developed by Southern Regional Research Laboratory, described in the July, 1952, issue of TEXTILE WORLD, has recently been modified for increased ease of installation.

The attachment has three functions: (1) it facilitates weaving high-density and hard-to-weave fabrics; (2) it improves fabric cover; and (3) it eases the mechanical strain on the loom.

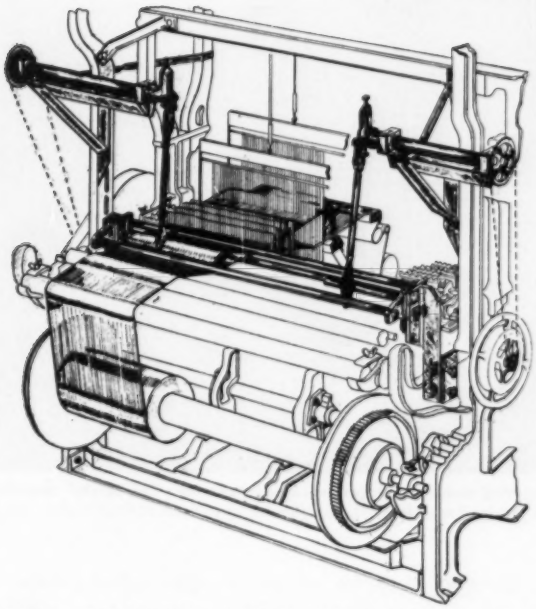
Basically, the attachment consists of a tensioning bar that splits the warp into two shed layers and a means for moving the bar in a vertical plane to apply maximum tension alternately to one shed and then to the other at the instant of beat-up.

The timing of the tension bar results in a slack bottom shed at the beat-up and allows the filling yarn to be beaten under the previous pick at the fell of the cloth. On the next beat-up, the ends that were slack become tight, thereby rolling the pick completely into the plane of the fabric. This sequence of actions permits the picks to be beaten more closely together than is possible in normal weaving when all the warp yarns are

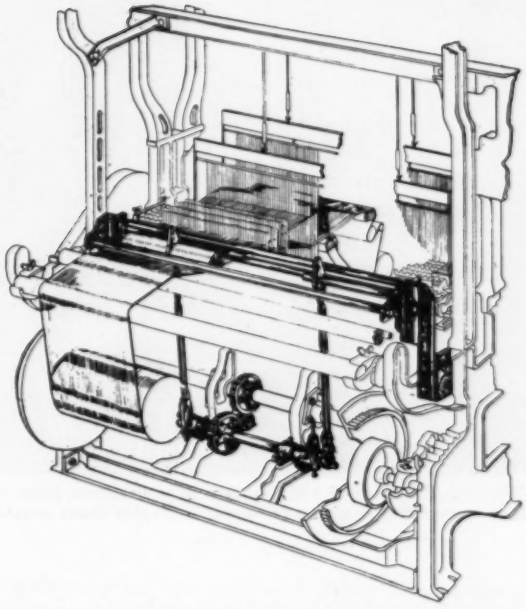
TABLE 1—Physical Properties of Representative High-Pickage Fabrics

Physical property		Weave					
		Oxford	Oxford	Oxford	2/2 Basket	Sateen	Twill
Thread count (Ends per inch)	Warp	194	124	81	188	141	84
	Filling	121	64	34	165	94	44
Yarn number	Warp	80/2	36/2	9s	80/2	40/2	9s
	Filling	80/2	18/2	13/4	80/2	40/2	13/4
Weight (oz. per sq. yd.)		6.4	10.7	15.8	7.1	8.7	18.6
Crimp (%)	Warp	15.9	21.5	17.6	17.2	11.5	18.4
	Filling	5.9	3.7	12.1	3.0	4.9	5.2
Breaking strength (lbs.) (1-in. strip)	Warp	134.5	132.6	118.5	143.9	161.6	149.6
	Filling	116.7	226.8	233.0	170.0	116.3	279.6
Tear resistance (lbs.) (Tongue)	Warp	5.5	6.9	12.5	5.6	7.3	22.9
	Filling	2.8	5.8	12.1	4.0	5.8	23.9
Abrasive resistance (Cycles) (Stoll Flex)	Warp		1,383	1,765	2,325	2,023	1,906
	Filling		2,546	4,916	3,820	2,337	3,379
Hydrostatic pressure* (cms.)		105.7	74.7	19.1	100.3	45.0	25.1
Drop penetration (ccs. in 3 hrs.)		0	0	293	0	338	166
Air permeability (Cu. ft. per min. per sq. ft.)		0	0	6.9	0	2.4	3.2

*Test Method I.



NEWEST ATTACHMENT for high-pickage fabrics is driven from overhead. The tensioning bar is oscillated to make the split warp shed alternately tight and slack at the beat-up.



AUXILIARY CAMSHAFT DRIVE is used to oscillate the tensioning bar. This second method of making high-pickage fabrics on many types of looms gives the same results as the overhead drive.

under the same tension at the beat-up.

Although the attachment is used for the purposes previously mentioned, its principle application has been to weave extra-dense cotton fabrics. Representative high-pickage fabrics that have been produced in the textile unit of SRRL are presented in Table 1, together with data on their physical properties.

Makes Waterproof Fabric

Experience with the attachment has shown that it is possible to weave fabrics with sufficient density to make them water resistant and wind resistant without requiring chemical treatment. To evaluate the endurance of these water-resistant properties, a high-pickage fabric woven at SRRL and fabricated into tarpaulins is being subjected to severe service tests as athletic field covers by the New Orleans Professional Baseball Club.

The tarpaulin fabric used is a 124x64 oxford weave constructed of 36/2 warp yarns and 18/2 filling yarns. The cloth has 64 ppi. and although not the maximum that could have been woven with the attachment, is 23% greater than the maximum that could be woven on a loom equipped with drag rolls. This fabric construction was selected so that the tarpaulin would be about one-third lighter than the chemically treated cotton tarpaulins customarily used for field covers.

Waterproofing treatment was not used on the tarpaulin, but mildew-

CONTINUED ON PAGE 200

TABLE 2—Effect of Service on the Physical Properties of High-Pickage Tarpaulin

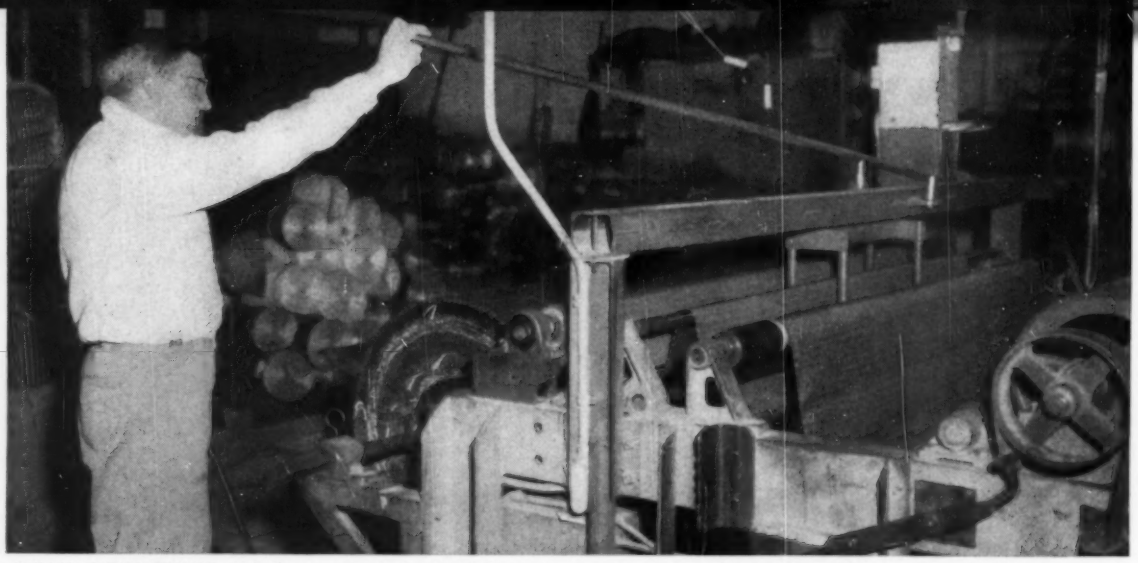
Physical property		Unexposed	Seasons in service			
			Two	Three	Four	Five
Thread count (Ends per inch)	Warp	128	128	132	132	132
	Filling	60	64	64	65	64
Breaking strength (lbs.) (1-in. strip)	Warp	133.8	128.5	132.0	92.4	76.6
	Filling	206.6	186.0	188.4	128.8	129.4
Tear resistance (lbs.) (Trapezoid)	Warp	17.3	13.7	12.9	10.3	7.7
	Filling	9.0	8.8	7.6	5.8	5.1
Hydrostatic pressure* (cms.)		56.0	61.3	**	†	††
Drop penetration (ccs. in 3 hrs.)		0	0	0.12	0	0.10

*Test Method I.
**Fabric wets at 15 cms., leakage occurs at 100 cms.
†Fabric wets immediately, leakage occurs at 88 cms.
††Fabric wets immediately, leakage occurs at 54 cms.

TABLE 3—Effect of Weathering on the Physical Properties of an Inherently Water-Resistant High-Pickage Fabric and a Fully Treated Commercial Tarpaulin Fabric

Physical property		Unexposed		6 months' exposure			
		High-pickage fabric	Commercial fabric	High-pickage fabric	% Change	Commercial fabric	% Change
Weight (oz. per sq. yd.)		12	22.5	11.7	−3	23.5	+4
Thread count (Ends per inch)	Warp	128	44	130		45	
	Filling	64	29	63		30	
Breaking strength (lbs.) (1-in. strip)	Warp	139	192	99	−29	109	−43
	Filling	219	198	153	−30	153	−23
Hydrostatic head* (cms.)		76.5	112	72.5	−5	66	−41

*Test Method I.



SQUARING THE FILLING with the warp is an important factor in preparing plaids and striped material for coating. This batcher controls out-of-square filling through a tilting-roll device that exerts pressure on the leading selvage.

A Finisher Streamlines
WATER REPELLENCY & COATING

Putting a rubber backing on fabrics that had already passed through a water-repellent finish used to be a two-step process at Synthetics Finishing Co., Philadelphia, Pa. Now the mill has a one-shop setup that gets both jobs done in one run. Advantages are—

- **Lower costs**
- **Less fabric loss**
- **Smoother flow of goods**

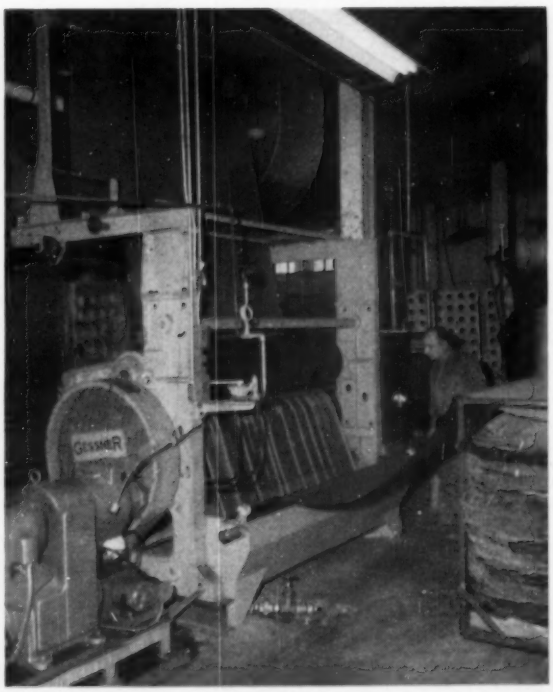
By ROBERT W. PINAULT
Assistant Editor, TEXTILE WORLD

SYNTHETICS FINISHING CO. in Philadelphia has combined two finishing operations into a one-run process by rearranging machines and adapting finishing formulas to fit the process.

The fabrics handled are principally automotive upholstery and seat-cover material. In the upholstery materials, yarn-dyed fabrics predominate and jacquard patterns are common. Seat-cover fabrics include dope-dyed rayons and rayon-and-acetate mixtures.

The basic finish for all styles is a rubber backing that is applied to bind warp and filling threads more securely. The backing gives more weight to lighter fabrics and reduces the tendency of all fabrics to fray at the seams.

But the automobile industry has also demanded a water-repellent finish on its better-grade fabrics. Until recently, applying a water repellent was a separate operation at Synthetics Finishing. First, the goods were padded with a water-repellent material, batched up, and then moved to



WATER-REPELLENT COMPOUND is applied in this 12-ton pad. Compensating roll, top left, actuates the hydraulically controlled speed-changing device. The drive is a package unit complete with motor, reduction gear, and hydraulic pumps.

COATING THE BACK with a latex-resin mixture is the second step, followed by drying. Thread-up leads cloth over the top of the coating roll; coated back touches no guide rolls from this point on.

the coating-dyeing range, where the rubber backing was applied.

New Pad Lined Up

To get a one-run process for these operations, Synthetics bought a new Gessner 12-ton padder with two rubber rolls of 80-in. face. By shifting some smaller equipment, room was made for the pad to be lined up with the coater and dryer.

Drive of the pad is through a Reeves unit that has hydraulic control of the speed-change mechanism. Goods pass from the pad over a compensator roll that is linked to the variable-drive unit by a chain-and-lever arrangement that actuates the speed-changer.

Drives for pad, coater, and dryer can be locked in electrically for synchronized drive; or by flipping a switch, each unit can be operated separately.

Straightening Is Important

When batches are made up for finishing, care is taken to keep filling square with the warp, because most patterns either are plaids, or have horizontal stripes. If these were coated while on the bias, the distortion would be permanent and proper cutting impossible.

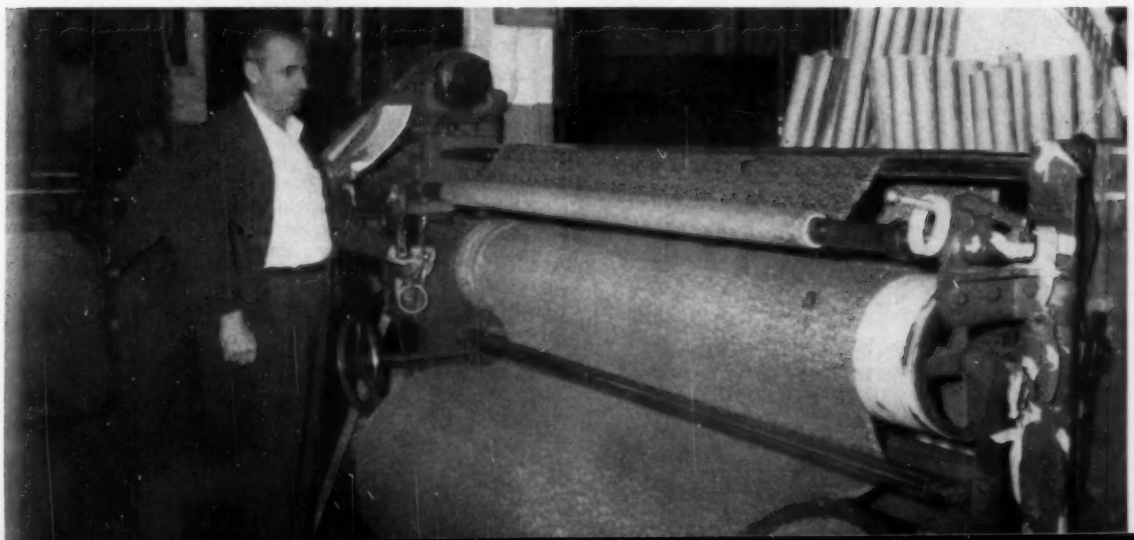
After batching and straightening, the goods go directly to the finishing pad, where sufficient Sylmer silicone water repellent is applied to give 1½% residual silicone resins. Then the goods pass through a Mawaco coating machine and pick up sufficient latex-resin mixture to increase the weight of the fabric 1½ to 2 oz. per linear yd. The thread-up for this process permits the fabric to pick up a thin layer of latex from the surface of the coating roll, which revolves in the opposite direction to cloth travel.

A doctor blade controls the thickness of the coating on the roll, and another blade evens out and removes excess material from the fabric just as it leaves the coater.

The cloth then travels into a Kenyon return-pass pin tenter. Temperature is maintained at 210 to 220° F., sufficient for drying and curing the latex and the water repellent. Production varies with the weight of the fabric but will average 10 yds. per min. Advantages of getting two finishing processes lined up for nonstop operation include fewer losses from dirty ends, less handling, and smoother flow of goods.

Early attempts at applying a water repellent and following directly with rubber backing didn't work out too well. There was a tendency for the backing to creep around to the front of the fabric, where it affected the shade. This trouble was overcome by adding a resin to the latex mixture.

FINAL INSPECTION and tubing complete processing. Here a yarn-dyed jacquard weave scheduled for 1956 Cadillac upholstery is being given a final check for quality, width, and general appearance before shipping.



How To Measure and Control WAVES IN DRAWING

- Fibers that get out of control when rolls slip or are not set correctly are prime causes of excessive wave length and amplitude in drawing sliver
- Here are the results of some research on the cause and prevention of excessive sliver variation that may help mills plagued with drafting-waves trouble

By N. H. POMFRET

THE FIBERS in card sliver are curved, hooked, and crisscrossed in every imaginable manner. The drawing operation is designed to straighten out these fibers and prepare the sliver for more-efficient drafting at later processes. Doubling the sliver is the best way to reduce long-term variation.

The drawing process introduces another type of variation per unit length, which at this stage may be designated as short-term variation. This variation is caused by the arrangement of the fibers in card sliver, fiber-length variation, imperfect drawing rolls, and imperfect mechanical operation of the machine.

Research shows that the average angle of the fiber to the axis of the card sliver is about 55°. One drawing passage reduces the angle to 45°, two passages reduce the angle to 36°, and three passages reduce it to 31°.

Fibers Are Disturbed

It is almost universally accepted that two drawing passages are the most economical for most yarns since no matter what the degree of parallelization of the fibers, the fibers are disturbed when twist is inserted at the fly frame. Also, since the cost of each passage is constant, the advantages to be gained from multiple passages diminish with each succeeding passage. Frequently, cumulative irregularities introduced by the drawing rolls offset the advantages of additional doubling.

The drafting wave is usually considered to be twice the staple length of the stock being processed. But since drafting waves are caused by fibers momentarily out of control of both the feed and delivery rolls, it is to be expected that any factor increasing the length of time the fibers are out of control will also increase the wave length.

To check the validity of this theory, individual slivers from 1 1/16-in. staple were passed through two lines of rolls with a draft of 2.94 and different roll settings. Drafting waves were recorded on an evenness-tester chart, measured, and converted to the same length units as the roll settings. Result was a wide range of wave length.

The procedure was repeated with roll settings of 1 5/16 ins. and 1 7/8 ins. The wave length did not change between the 1 1/8-in. setting and the 1 5/16-in. setting, but it did lengthen considerably with the 1 7/8-in. setting. The median length (50% of the wave lengths are either above or below this figure) showed clearly increasing lengths with wider settings.

Final Figures Shown

This technique was used to ascertain the mean amplitude of the waves; and the final figures, expressed as percentages of the mean sliver weight, are as follows:

Roll settings	1 1/8 ins.	1 5/16 ins.	1 7/8 ins.
Wave amplitude	15.9%	17.9%	19.4%

The wave lengths and amplitude for the same sliver are sketched to scale on the accompanying chart, which shows how roll settings affect wave formation.

The importance of short-term variation must not be underestimated, because with modern processing methods no further doubling takes place in yarns up to 30s.

With a drawing sliver weight of 60 grains per yard and a draft of 216, the wave length becomes 409 ins. with 1 1/16-in. roll settings, 462 ins. with 1 5/16-in. settings, and 509 ins. with 1 7/8-in. settings.

The number of picks per wave at the loom, which could be 11, 13, and 15, might illustrate the effect of waves more clearly. The chart gives an idea of the effect of wave formation on yarn numbers.

If each A wave represents 410 ins., one lea (120 yds.) of yarn will contain 10½ waves, even if the waves are formed at the last drafting zone of the

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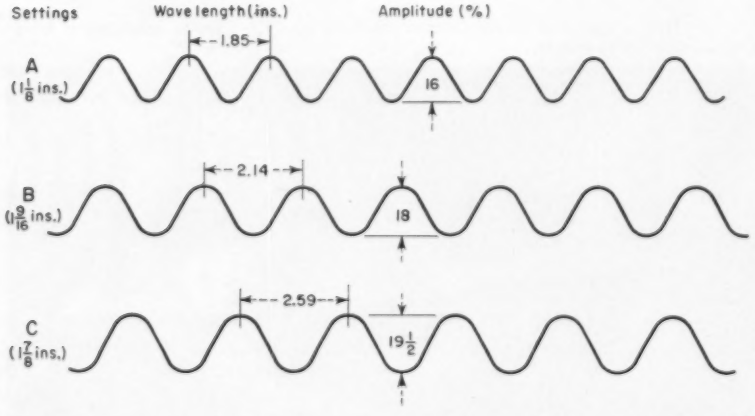


WAVE LENGTHS AND AMPLITUDES for the same sliver are charted to show how roll settings affect wave formation.

How Drafting Waves Affect COMBER NOILS

• Fibers in card sliver are bent at one or both ends to form hooks. The direction in which these hooks travel has a very definite effect on drafting waves and comber noils. Here are some ideas that may help you improve sliver variation and reduce noils.

By WILLIAM E. MORTON

DRAFTING WAVES in sliver, roving and yarn are not new. Studies aimed at learning the causes of these irregularities have been going on for a good many years in a number of countries. Most of the research on waves prior to World War II involved spinning only.

Around 1945, it occurred to me that if drafting waves are caused by all types of roller-drafting systems, the irregularities are compounded from the card forward. Accordingly, I assigned a research student to find out what happens to sliver drafted between two pairs of rolls on the card.

He found that when the draft is in the critical range of 1.6 to 1.7, the sliver tends to break regularly within 5 yds. after leaving the front rolls. This phenomenon indicates that the sliver is in a state of tension when it leaves the front rolls and that it possesses sufficient powers of retraction to break itself at places of low resistance.

What makes the sliver behave like a stretched spring?

In an effort to learn the answers, we decided to study the condition, disposal, and arrangement of the fibers in the sliver. Our first experiments used tracer fibers treated with radioactive substances; but in the end we came up with a simple test method based on the fact that an undyed fiber immersed in a liquid with the same refraction index is practically invisible.

Tracer Fibers Are Dyed

With this thought in mind, we mixed about 0.01% of black-dyed fibers into some raw stock and made a card sliver. The finished sliver was then immersed in a shallow glass of appropriate liquid and examined under a microscope; the dyed tracer fibers were the only ones visible.

Using this technique, we examined hundreds of fibers and came up with two important observations:

1. The majority of fibers in card sliver are bent at one or both ends to form hooks. Some of the fibers look like hairpins.

2. Many more fibers have large hooks at their trailing ends than at their front ends.

From this point on, our research split two ways. We asked one researcher to investigate the operation of the card in an effort to learn what causes the hooks. This work is still under way and has no further bearing on the present picture. We know the hooks are there.

Starting in the other direction, we attempted to learn what happens to the hooks during drafting and how long they survive.

We soon found that the hooks survive a lot of processing. After two passages through drawing frames, about 35% of the fibers still have hooks at one or both ends and the fibers are in a great state of disorder—despite the sleek, lustrous appearance of the finisher drawing-frame sliver.

Fibers Still Have Hooks

If the fibers are still in a mess after a total draft of 36 on the drawing frames, what is the condition of the comber lap that is prepared with a much lower draft? We had a look and learned that almost 50% of the fibers still have hooks at one or both ends, quite apart from other disorder.

This situation interested us because we know that the comber does not extract anything like the amount of noils that you would expect in theory. Furthermore, the comber always extracts too much long fiber as noil and leaves far too much short fiber in the sliver.

Then it occurred to us that if we added one drawing process before combing, the direction in which the fibers are presented to the needles will be reversed. With two processes of comber preparation, the larger hooks lead in the sliver lapper and trail in the ribbon lapper and then lead again in the comber. We decided to add one drawing process after the cards to reverse the direction of the big hooks in the comber.

The outcome of this experiment exceeded our expectations. Results were more fiber breakage in combing, more short fibers in the sliver, and more long fibers in the noil. Noil increased from 13.1 to 16.8%.

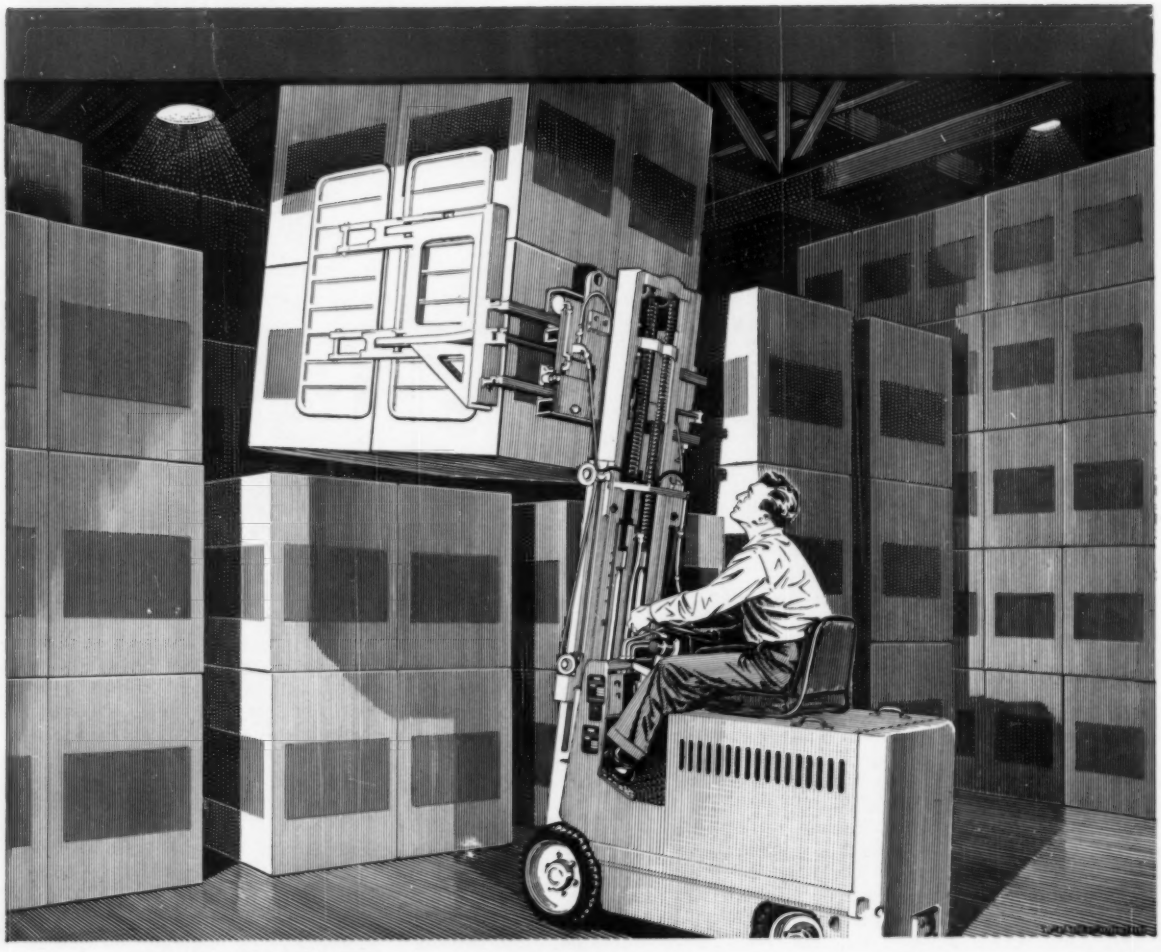
We next reversed the card-sliver in the cans, which altered the direction of the fibers at each process, and a different picture emerged: Noil dropped from 13.1 to 11.3%; and there were fewer short fibers in the sliver and fewer long fibers in the noil.

Increased Drawing Pays

Repeated experiments with different kinds of cotton and various gauge settings showed the same results. In general, increased drawing before combing reduced noil by paying amounts and ultimately produced a better-looking and stronger yarn. But to obtain these advantages, there must be an even number of processes in the preparation of the laps. If there is an odd number, there must be an artificial reversal somewhere, or the advantages will be lost.

The explanation is that although by increased drafting you reduce the number of big and little hooks put in the fibers by the card, there are still more big hooks surviving in the comber lap than there were little hooks to begin with. And these larger hooks must be fed head foremost to the comber cylinder or you get poor combing.

All our work was done on long-staple cottons. There is no guarantee that worthwhile dollar savings will result if this method is used with short-staple, less-expensive cottons in conjunction with American wage levels.



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CONTINUED FROM PAGE 131

last passage. At the next-to-last drafting zone of a conventional frame, a lea contains only about four waves. With lap drawing, a lea would contain only 2.3 waves in the next-to-last drafting zone.

The earlier the waves appear in the drafting process, the more pronounced will be the yarn variation. For example, a 2½-in. irregularity appearing in the first drafting zone is drafted to 65 yds. on conventional drawing and to 170 yds. on the lap system.

Coarse Sliver May Result

Since most drawing-frame top rolls are driven by frictional contact from the bottom rolls, the two rolls must revolve at the same speed and the grip must be adequate to draft the sliver. If the top-front-roll speed gets out of control of the bottom roll and under control of the sliver, there will be backward slip and inadequate drafting between the first and second line of rolls; coarse sliver will be produced.

In the case of back rolls, friction between the rolls must be sufficient to prevent the top roll from being pulled forward faster than the bottom roll; such action produces forward slip.

Intermediate rolls present a more-complicated problem, since there is both a backward and forward force to be considered. The second and third top rolls can slip either backwards or forwards or in alternate directions. Such slippage plays havoc with sliver evenness. The only way to prevent this slippage is to carefully adjust weight or spring pressure on the rolls and see that it stays properly adjusted.

Friction on the top-roll bearings must be kept to a minimum because the grip between the rolls must be sufficient to offset the friction before the top rolls receive the energy that causes them to revolve. Cleaning and lubrication of top-roll bearings are of utmost importance.

To keep length and amplitude of waves to a minimum, rolls must be set as close as practicable to the staple length. However, rolls should not be set too close or drafting force may be increased sufficiently to cause roll slippage. Proper roll settings can be arrived at only by experimentation, and the following pointers should be kept in mind during the experiments:

1. Drafting forces increase as rolls are set closer.
2. Increased draft decreases the drafting force.
3. Drafting force decreases with parallelization of the fibers.
4. Light slivers draft more easily than heavy ones.
5. Mechanical defects that permit movement of the roll nips affect sliver evenness.

Calculate LABOR COST From Weaving Pick Rates

• When styles of cloth are changed in the weave room, it's often desirable to know the direct labor cost before jobloads are laid out. Here's a quick and simple formula to figure labor cost for weavers and batteryhands.

Supervisors in the weave room, or other people who are concerned with fabric cost, can figure their direct labor cost per pound of woven cloth on various styles of fabrics by using a simple formula.

Weavers are usually paid on the basis of rate per 1,000 or 10,000 loom picks. In some plants, batteryhands are paid on the same basis. The pick rates are determined by the standards department based on the principles of other piece-work rates; that is, the production of the machines per assignment (in hanks or picks) per hour at a standard efficiency divided into the rate of pay per hour.

Several incentive plans are used to determine both the workload and the rate of pay to be earned. But all plans produce at a rate of 1,000 or 10,000 picks.

Cost Is Based on Picks

To figure the direct labor cost of weavers and batteryhands per pound of fabric, divide the pick rate per 1,000 or 10,000 picks by the pounds of cloth per 1,000 or 10,000 picks.

To find the pounds per 1,000 or 10,000 picks, you must know the picks per inch and either the yards per pound or the pounds per yard.

When the yards per pound or the pounds per yard are not available but the ounces per square yard are given, the pounds per yard may be figured the following way:

$$\frac{\text{oz. per sq. yd. x width}}{\text{16 oz. per lb. x 36 ins. per yd.}} = \text{lbs. per yd.}$$

Assume, for example, that you are weaving a fabric of 1.75 yds. per lb. with 44 ppi. at a total weaver and batteryhand rate of $0.0126 per 1,000 picks.

How the Formula Works

Divide 1x1,000 by the pounds per yard x 36 ins. per yard to get the pounds per 1,000 picks. Divide the rate per 1,000 picks by the pounds per 1,000 picks to get the cost per pound. For a comparison of cost per yard, divide the cost per pound by the yards per pound.

Example:

$$\frac{\text{1 x 1,000 picks}}{\text{1.75 yds. per lb. x 44 ppi. x 36 ins. per yd.}} = \text{0.360 lb. per 1,000 picks}$$

$$\frac{\text{\$0.0126 rate per 1,000 picks}}{\text{0.036 lbs. per 1,000 picks}} = \text{\$0.350 D.L.C. per lb.}$$

Where: D.L.C. = Direct labor cost

$$\frac{\text{\$0.0350 D.L.C. per lb.}}{\text{1.75 yds. per lb.}} = \text{\$0.0200 D.L.C. per yd.}$$

When the pounds per yard are available, the pounds per 1,000 picks may be determined by this method:

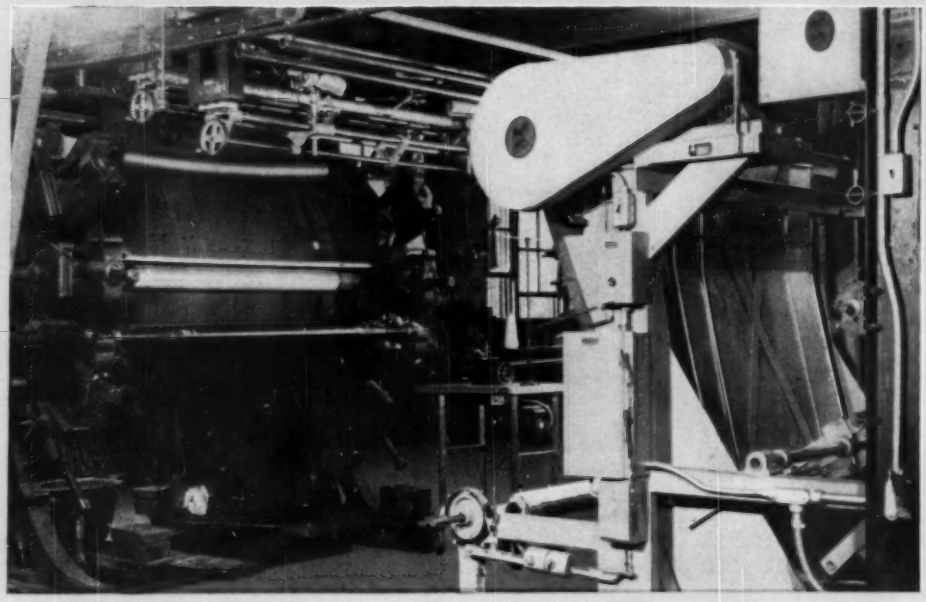
$$\frac{\text{0.571 lbs. per yd. x 1,000 picks}}{\text{44 ppi. x 36 ins. per yd.}} = \text{0.360 lbs. per 1,000 picks.}$$

The pounds per 1,000 picks are used for a production constant by accumulating the number of 1,000 picks recorded in a period for each style and applying the proper production constant to them.

Mount Hope SYSTEM

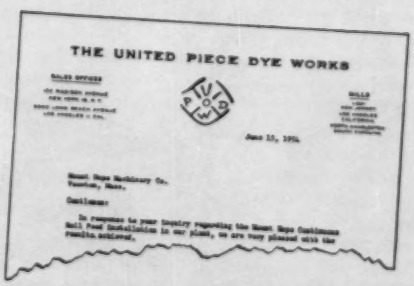
"THE UNITED PIECE DYE WORKS

finds yardage increased, operator time saved— and strict quality standards upheld!" says Head Printer Frank Du Bois.



"We are very pleased with the results achieved," Mr. Du Bois says of the Mount Hope Continuous Roll Feed installation in the Lodi, N. J., plant of the United Piece Dye Works. "The unit increases production and helps maintain our quality standards. Addition of the Roll Feed creates ample time for the operator to sew rolls together and leaves him free to take care of other necessary operations."

As an integral part of the Mount Hope System, the Continuous Roll Feed shown above is equipped with Mount Hope Open Width Tension Device, and Mount Hope Expander Roll at entrance end of printing machine maintains full width for wrinkle-free, non-stop feeding at all times. Simplicity, efficiency—economy of time, labor and material!


THE UNITED PIECE DYE WORKS

June 15, 19[illegible]

Mount Hope Machinery Co.
Taunton, Mass.

Gentlemen:

In response to your inquiry regarding the Mount Hope Continuous Roll Feed Installation in our plant, we are very pleased with the results achieved.

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Georgia TOE Cracks Down On MAINTENANCE PRACTICES

Men from practically all mills reporting at TOE say that their maintenance departments have complete charge of maintenance throughout the mill. The work they direct covers—

- **Floor Care**
- **Air Conditioning**
- **Humidification**
- **Electric Motors**

AT A RECENT MEETING of the Textile Operating Executives of Georgia held in Atlanta, men from 11 mills gave details of the practices they are using for better maintenance throughout all mill departments. Maintenance men either do the work themselves or have mill production men do it under their direction.

Floor Care

All 11 mills reporting on floor care are giving their floors constant attention. Three mills are wet-scrubbing their floors; six are sanding the floors and sealing them; two are using both methods; and one mill is experimenting with several floor-treating methods to find the best method for their operations. Reports of the methods used by mills are:

Mill A—"In sealing our floors, we first had four men on the job. After we covered the entire plant, we turned floor maintenance over to the heads of each department.

"We now have one man who does part-time buffing and finishing. He buffs and finishes new floors that replace bad floors and buffs other floors periodically where buffing is needed most.

"For our first finish, we sand the floor with No. 3½-grit sandpaper; then we use No. 1½-grit and finish with No. 1-grit.

"Next we use a primer, let it dry, and buff the floor with No. 4 steel wool. Then we apply a heavy-duty finish.

"The cost of the materials we use is: No. 3½- and 1½-grit sandpaper $0.55; No. 1-grit sandpaper $0.38; steel wool $4.35 per roll; floor seal in 55-gal. drums $3.45 per gal.; and heavy-duty floor finish in 55-gal. drums $3.45 per gal."

Methods for Finishing

Mill B—"We sand our floors smooth, apply one coat of floor sealer, let the sealer dry 24 hrs., sweep the floor, and mop the floor with a mop that has a little floor finish on it.

"The finished floors are buffed with steel wool every six months. We buff the floors with steel wool and apply a coat of floor finish about every 12 months.

"We do not have figures on the exact cost of floor maintenance, but the cost of materials is not exorbitant. Labor cost is less than half the cost of the floor-scrubbing methods we formerly used."

Mill C—"All floors have been sanded and sealed where it is practical. We do not have a regular cycle for treating the floors, but we use a light sealer-cleaner on sealed floors.

"Only a small amount of scrubbing is necessary in the card room and spinning room except next to the walls and posts. We scrub the weave room more often than the carding and spinning departments. For scrubbing, we use a liquid detergent."

Use Wet and Dry Finishing

Mill D—"We are using the Tennant system on our wooden floors and scrubbing machines on our concrete floors in the weave room. We buff our wooden floors lightly every three months and add a light coat of finish every six months. We scrub our weave room once each week."

Mill E—"We buff our floors and use a floor seal. No scrubbing is done. Approximately 120,000 sq. ft. of floor is involved, and one man is assigned to floor maintenance. He works on Saturdays so that refinishing can be done when machinery is idle."

Mill F—"We use Tennant machines for sanding, buffing, and polishing floors. We have three machines: (1) a 16-in. machine for wide areas, (2) an 8-in. machine for narrow alleys, and (3) a 7-in. machine for edging.

"We use a plastic-base floor seal and apply Floor-tone periodically. We also use soap.

Work at Shutdowns

"The waste-house crew maintains the floors during week-end shutdowns and while the mill is closed for vacation week. All floors are completely sanded or rebuffed and resealed once a year. Floor-tone is applied to all floors every two weeks; this product cleans the floor and also gives it a new gloss. Floor areas where traffic is very heavy get an additional treatment.

"Materials cost is approximately $3,300 per year, and labor cost is $1,000 per year."

Mill G—"We maintain our floors by buffing them periodically with steel wool in a buffing machine. Then we apply a coat of floor seal. We repeat this operation every four to six months. However, before this floor-treating system is used, we sand the floors thoroughly and apply an initial coat of seal."

Men Work in Crews

Mill H—"A crew of three men scrub our floors with a soap solution. They complete a cycle every two weeks. One employee operates an electric scrubbing machine while two other employees remove waste water and do other auxiliary work. Labor cost is $275 for the cycle, and material cost is approximately $100."

Mill J—"Floor maintenance is the responsibility of each department in

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our mill. We scrub floors with soap and water every two weeks where the floor is unfinished, such as in the weave room around looms. Then the floor is mopped dry.

"We clean our finished floors every two to six weeks, depending on the department and how the floor is used. A cleaning solvent and an oil-base floor polish that does not damage the floors are used. In the weave room, we have four men cleaning floors all the time at a cost of $170 a week.

"We refinish our floors about once a year, depending again on how the floor is used. We figure it costs approximately $99 to scrape an area of 5,700 sq. ft., mop the floor with a detergent and oil, and then apply varnish. It takes four men about 4 hrs. to complete this job."

Air Conditioning

Eleven mills gave details on maintaining and cleaning air-conditioning equipment and humidifiers. Typical practices by mills are:

Mill A—"Our equipment consists of unit stations, evaporated-cooling, dry-duct systems, and atomizers. Each mill department does its own minor maintenance jobs, and the shop handles major maintenance work. Each department changes the charts and cleans screens each day.

"We have a small man crawl through the ducts and brush them out every three months. We blow the ducts out with compressed air between the three-month cleaning periods."

Mill B—"Atomizers are cleaned by one shop employee. Ducts are cleaned by each mill department. Adjusting operations and fixing are done by machine-shop employees. The central-station air washer is scrubbed once each week.

"Each department cleans its own ducts by washing them with a hose. A man is sent inside the large ducts while the mill is running and the lint inside is wet. He starts at the little end of the duct and washes the duct toward the big end with a water hose connected to a water line. Much of this washing can be done from outside the ducts."

Clean by Schedules

Mill C—"We have both humidifier heads and atomizers in our plant. We have a special crew that cleans and maintains these units. The crew consists of four men on the first shift, three men on the second, and three men on the third shift.

"The main filter unit is cleaned every two weeks. The small gravel that makes up the filter has to be removed with a shovel, placed in drums, washed, and then returned to the filter basin. This operation requires one man's time for 8 hrs."

Mill D—"We have a central-station air-conditioning system. One man checks the system and makes minor repairs. A crew from the maintenance department cleans the central-station penthouses each week end. A major cleaning job is done in the penthouses once a year during the vacation shutdown. Scales are removed and fans are repainted with a rust-inhibiting paint. Air-washer pans are painted with an asphalt-type coating.

"We put a man inside our ducts to blow them out and wipe off the inside surfaces."

Work in Four-Man Team

Mill E—"We have six men who do all maintenance and repair work on our humidification equipment. In addition to repair work, each man is assigned a proportionate part of cleaning of controls and 1,781 atomizers. We have 34,252 spindles.

"Four men clean ducts on week ends. Two of these men work from stepladders, one on each side of the duct.

First, they remove the louvers and hand them down to men on the floor. And while the louvers are being cleaned, the men on the ladders brush the inside of the duct with whisk brooms. They push the lint forward all the time and remove it at the duct outlets. Then the lint is placed in a waste box on the floor."

Electric Motors

Eleven mills reported on their maintenance practices on electric motors. In 10 of the mills, the maintenance department does all maintenance work on the motors. In one mill, individual drives and small motors are handled by production departments and large motors are handled by the maintenance department. Mill practices are:

Mill A—"We think it's better to have the maintenance department do all maintenance work on motors. Electricians are trained for this work, and most of the work has to be done in the electric shop anyway. The electricians do a better lubrication job since they also do the maintenance work; and we get uniform lubrication in all departments."

Mill B—"Our electric motors are blown out with compressed air each week. Then they are oiled. It is best for the maintenance crew to look after motors because they are held responsible. They also have more experience and therefore can detect faults in motors more quickly when they occur."

Check Motors Constantly

Mill C—"Our maintenance program for motors is handled by one man and a helper, and this system covers motors in three plants. These men oil motors and blow them out. They also have additional jobs such as cleaning air-filter banks, etc. These men report any defects they find on their weekly rounds to our electrical department to be handled by other employees.

"In setting up the weekly schedule for the motor-maintenance men, we have to coordinate their schedule with the schedule of the various departments. We try to blow out the motors at the same time that cardroom employees clean up for the week-end shutdown, for example.

"The man responsible for this work is a capable electrician. We believe his understanding of electrical maintenance enables him to do a better job than we would get if it were handled by the various departments."

Mill D—"Our motors are cleaned, inspected, and lubricated once each week. The motor air gap is checked with a feeler gauge once each month.

Failures Are Eliminated

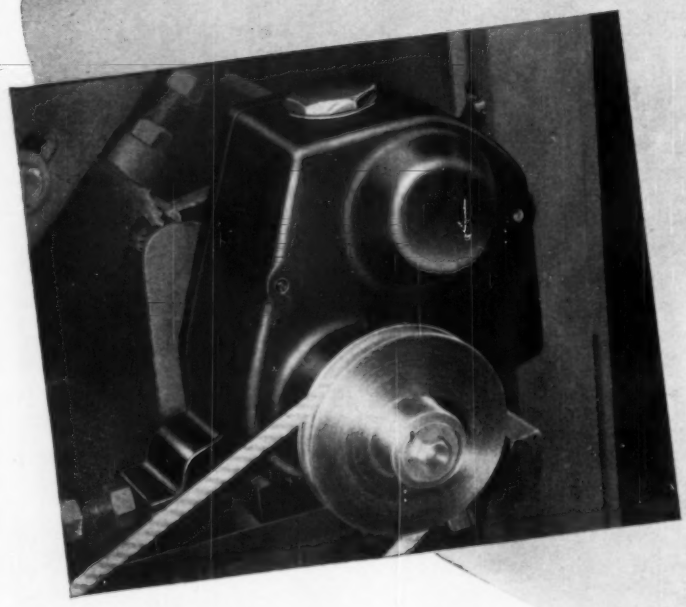
"All motor maintenance is handled by the maintenance department under this setup. Motors are checked and inspected by experienced men, and our failures are kept to a minimum."

Mill E—"On our smaller motors, 7½ hp. and under, we do a general overhauling job once every four to five years. This work includes tearing the motors down, cleaning them, checking bearings, putting in new

CONTINUED ON PAGE 204

NOW.. from SACO-LOWELL

A NEW ANTI-FRICTION COMB BOX AND FOOT END ASSEMBLY



Completely redesigned in accordance with the best engineering principles, following closely the bearing manufacturers' recommendations, Saco-Lowell now makes it possible to eliminate costly and frequent replacement of comb box components.

This new comb box provides smoother, cleaner operation and requires virtually no maintenance. Oil leakage is eliminated through the use of oil-proof seals. No adjustments of any kind are necessary to compensate for wear. Power consumption is extremely low and operation is extremely smooth.

A special anti-friction bearing foot end stand is a vital counterpart of the new comb box assembly. For the first time, a micrometer-type adjustment, both vertically and horizontally, makes possible perfect alignment of the comb.

All moving parts are supported by anti-friction bearings of adequate size and capacity to assure long life. Lubrication is through a splash-type oil system, as recommended by the bearing manufacturers.

This new comb box and foot end assembly may be applied to old and new Saco-Lowell cards, Saco-Pettee cards and other makes of cards now in the mill. Another Saco-Lowell advancement that is continued proof "It Pays to use Genuine Saco-Lowell Repair Parts."

Remember– IT PAYS TO USE GENUINE SACO-LOWELL REPAIR PARTS

SACO-LOWELL

60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD and SACO, MAINE, and SANFORD, N. C.

SALES OFFICES: CHARLOTTE • GREENSBORO • GREENVILLE • ATLANTA

For more information, write direct or use Reader-Service post card.

POINTERS for SUPERVISORS

The Seven Keys to Good Human Relations

- Are there clues to the skills and characteristics that make a man a good supervisor? Are there qualities you can cultivate to increase your skill in handling people?
- Here's a look at the qualifications a successful supervisor should have.

By J. W. ALEXANDER, Industrial Relations Manager, Stark, Reid, and Asbeston Plants, U. S. Rubber Co.

Job knowledge and machine skill alone don't make a man a good supervisor. He must also qualify in the field of good human relations.

Since certain broad principles of managing people apply to any person who has the responsibility of controlling the performance of one or more people under him, let's consider these principles as basis elements. I choose to call these basic elements the "seven keys"—the keys that will unlock the doors that lead to good human relations.

1. Character

The first of the seven keys, in order of importance, is character. Any man who doesn't command the respect of the people under him can never be a good supervisor. The supervisor's life on the job and off the job must come up to a standard that will earn him the respect of the people he supervises.

2. Sincerity

One of the tragic mistakes commonly made in industry is failure to appreciate the intelligence of the average rank-and-file employees. The men and women in any department of any plant are no fools. They will, in time, determine whether the supervisor is sincere or is just putting on a good act. In all his relationships with the men and women under him, a supervisor must be sincere.

3. Interest

The third key is interest. People are basically selfish. The average man is primarily interested in himself and his family. His main concerns are his own problems and those of his family.

Interest in other people doesn't just happen. It comes from knowing people. Genuine interest in the employee, in his welfare, in his family, in his personal problems is a "must" in good employer-employee relations. The successful supervisor in time will get to know personally every man and woman who works for him.

4. Acceptance of Responsibility

When a man accepts a position where he controls the performance of people under him, he must be willing to accept certain responsibilities. These responsibilities go with the job, and the men and women in the department are aware of them. Any time a supervisor hedges on these responsibilities, he loses prestige and effectiveness and thereby lowers the efficiency of his department.

Perhaps the most difficult of all responsibilities to accept is that of taking blame for mistakes. A sure way to lose respect and make enemies is to pass the buck. One of the distinctive marks of a good supervisor is his readiness to admit he is wrong when he is wrong and to take the blame for any errors in judgment or mistakes that he may make.

5. Giving Recognition

Giving recognition is, without a doubt, one of the basic elements in promoting good human relations. Without this fifth key the supervisor cannot hope to be on good terms with his people.

Every employee, regardless of his job or his position, likes to be recognized as an individual. Each person has a name, and his name is important to him. When the supervisor knows each man and woman in his department well enough to call each by his or her first name, he has scored an important point in the matter of good management.

When the supervisor has made each employee feel that his work is recognized as an important item in the over-all production scheme, he has scored another important point. Every person has the desire to belong, to be recognized as a part of a group or an organization. When the supervisor makes every employee feel that his job is an important link in the operation of the plant and that he is a part of the group where he works, he has demonstrated that he has mastered another basic element of good management.

Giving credit is another important item in the matter of giving recognition. Failure to give credit when credit is due is a sure way to lose loyalty. To take credit for an accomplishment of another is a sure way to make a lasting enemy. A good supervisor never forgets to see that proper credit is given for a job well done or for any idea or suggestion that deserves merit.

6. Impartiality

Favoritism never fails to bring unfavorable reaction. If it is bad enough, it can ruin the morale and efficiency of any organization.

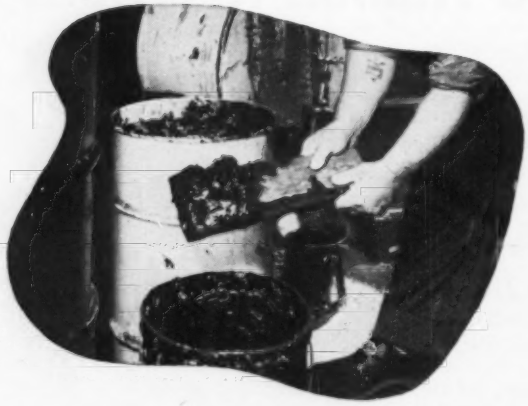
Being strictly impartial is a difficult matter. The supervisor, being human, naturally has his likes and dislikes because of the personalities and performance of the people whom he supervises. But impartiality is another "must" in good management. Employees will not cooperate with the supervisor who plays favorites.

CONTINUED ON PAGE 204

EASY WAY TO PUT OUTPUT ON THE UPSWING!

shift lubrication methods from

Backward to Forward!



ALEMITE AIR-OPERATED TRANSFER PUMP

gives 63% faster lubricant transfer

...saves right down the line!

The *real cost* of plant lubrication is not just the *lubricant* alone! Actually, it's the time and labor needed to get the lubricant *out* of the original drum—*into* a bucket pump or powergun—and then *applying* it to machine bearings. That's where the real costs add up!

And that's why an Alemite Air-Operated Transfer Pump can cut costs in your plant—especially if you are using old-fashioned hand methods of lubrication. It transfers 37 pounds of pressure gun grease *per minute*—direct from the original drum—completely sealing the lubricant at all times—protecting against mess, waste and contamination.

It's fast—and versatile! It can even handle alcohol, cutting oils, kerosene—almost any non-corrosive non-abrasive fluid you use by the drum. Delivers light fluids at a rate of up to 15 gallons per minute!

There's no better way to speed up your handling of lubricants—because an Alemite Transfer Pump pays for itself by saving man-hours and machine-hours as well!

• A 400-pound barrel of lubricant arrives at the plant—sealed, fresh, "refinery clean."

• An Alemite Transfer Pump is inserted in the bung-hole. It is threaded to fit—completely reseals the barrel.

• In less than a minute a 25-pound bucket pump is filled! No contamination, no air pockets, no mess or waste!

• Now the bucket pump is ready to service hundreds of hungry bearings with lubricant that is protected all the way from barrel to bearing!

***FREE!* New Booklet:**
"5 Plans for Better Lubrication"
Alemite, Dept. J-46, 1850 Diversey Pkwy.
Chicago 14, Illinois

Please send me my FREE copy of "5 Plans for Better Lubrication."

Name .....

Company .....

Address .....

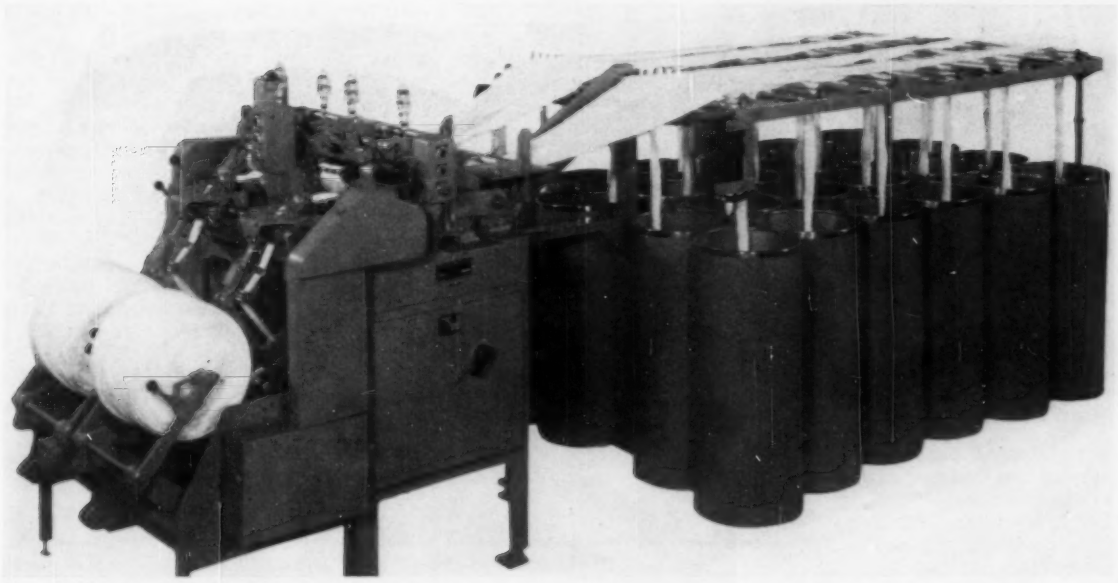
City ..... Zone ..... State .....

ALEMITE

Ask anyone in industry

A PRODUCT OF SW STEWART WARNER

EQUIPMENT and SUPPLY NEWS



Dual-Head Pin Drafter

A high-speed, dual-head pin drafter, equipped for dual-can, quad-can, or ball delivery, has been announced by Warner & Swasey Co., Cleveland, Ohio. This machine supplements the company's line of single-head pin drafters.

Of particular interest to top and yarn manufacturers, the new dual-head machine has special safety features that enable it to operate at 1,500 faller drops per minute.

Equipped for dual-can delivery, the pin drafter accommodates entering weights up to 3,500 grains per yard per head. With quad-can delivery on an apron or dead-plate infeed section, up to 1,500 grains per delivery are handled; a sliver weight from 40 to 150 grains per yard is supplied that is sufficient for intermediate as well as finishing operations in many mills.

The ball-delivery equipment, illustrated, handles sliver to 6¼ oz. per 5 yds. and utilizes a new linkage for actuating the traverse motion that is capable of producing a square ball up to 15 ins. wide and 18 ins. in diameter. Balls may be wound on any one of a variety of arbors.

Circle T-1 on Reader-Service Card

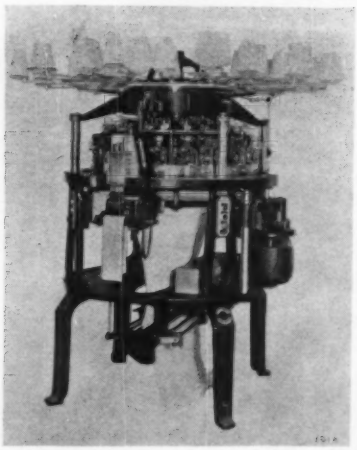
Roll Cleaner

A portable roll cleaner that permits an operator to brush and clean clearer rolls in half the time required by hand cleaning has been announced by Loftex Machine Co., Bolton, Ga.

The machine, 15x30 ins., is mounted on neoprene-covered casters so that it can be pushed between frames for cleaning rolls at convenient locations.

The cleaning cylinder is operated by a hand crank from either side. A pressure device enables the operator to apply the proper pressure for maximum cleaning. The cleaner prevents building up of waste on the rolls, and each time a roll is cleaned the cover is brushed and combed.

Circle T-2 on Reader-Service Card



Interlock Sweater Machine

Model TAI-24 is a 32-in.-dia., 24-feed, fully automatic multipurpose knitting machine built by Jacquard Knitting Machine Co., Inc., Philadelphia 24, Pa. The machine produces interlock, plain, or rib bodies with 2x2, 2x1, or 1x1 rib cuffs.

The machine can be equipped with two- or four-color yarn changers to permit a separate nylon draw thread, independent of the body yarn, for quick, easy separations.

A new automatic control stand that is quickly adjusted and easily serviced allows as little as ½ in. of wasted fabric at the control mechanism.

New controls on the cylinder and dial sections allow the sections to be removed and returned in place on the race without disturbing the needle or cam setup. The new vertical drive shaft has been raised to the side of the machine to permit easy removal of the fabric.

The two-speed drive and the motor are combined in one compact unit and mounted vertically on the outer edge of the beds. This drive is equipped with helical-tooth gears that are constantly lubricated by an automatic lubricating system to supply the correct amount of filtered oil to each gear from an oil reservoir in the unit.

Two electric clutches provide a positive drive to the high- and low-speed drive shafts. Speed changes are controlled by an electronic control panel that engages the high-speed clutch or the low-speed clutch according to the control chain.

Jogging is operated through the low-speed clutch regardless of the chain setting. A switch on the control panel allows the operator to run the machine in slow speed continuously during setups, sample making, trouble shooting, or in breaking in.

Other features are automatic stitch adjustment for cylinder and dial at each feed, paper-card automatic-control mechanism, automatic needle lubrication, electric counter, and three-roller fabric take-up.

Circle T-3 on Reader-Service Card

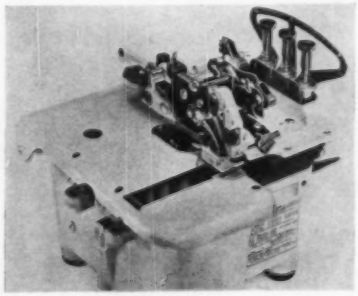
Nep Standards

An improved method of estimating neps in card web has been developed by the Swedish Institute for Textile Research, Gothenburg, Sweden.

A sample of the card web is removed between two sheets of clear plastic and compared with a set of five photographs of standard webs. An operator can classify 200 samples in 1 hr., and the results are said to be more accurate than ordinary nep-counting methods.

The standards are for sale by the Swedish institute.

Circle T-4 on Reader-Service Card



Sewing Machine

Willcox & Gibbs Sewing Machine Co., 214 W. 39th St., New York 18, N. Y., has marketed a sewing machine that will sew a row of double-thread chain stitching in conjunction with two- or three-thread overedging or sergeing stitches.

Circle T-5 on Reader-Service Card

Synthetic Feed Aprons

A synthetic belting for feed-box aprons, garnett-lapper aprons, picker-feed-table aprons, and other applications where moisture causes leather to rot has been announced by Robert A. Main & Sons, Inc., Paramus, N. J. The belting, called Mainflex, is said to wear many times longer than leather. It is available either in the form of finished aprons or rolls.

Circle T-6 on Reader-Service Card

Card and Spindle Bands

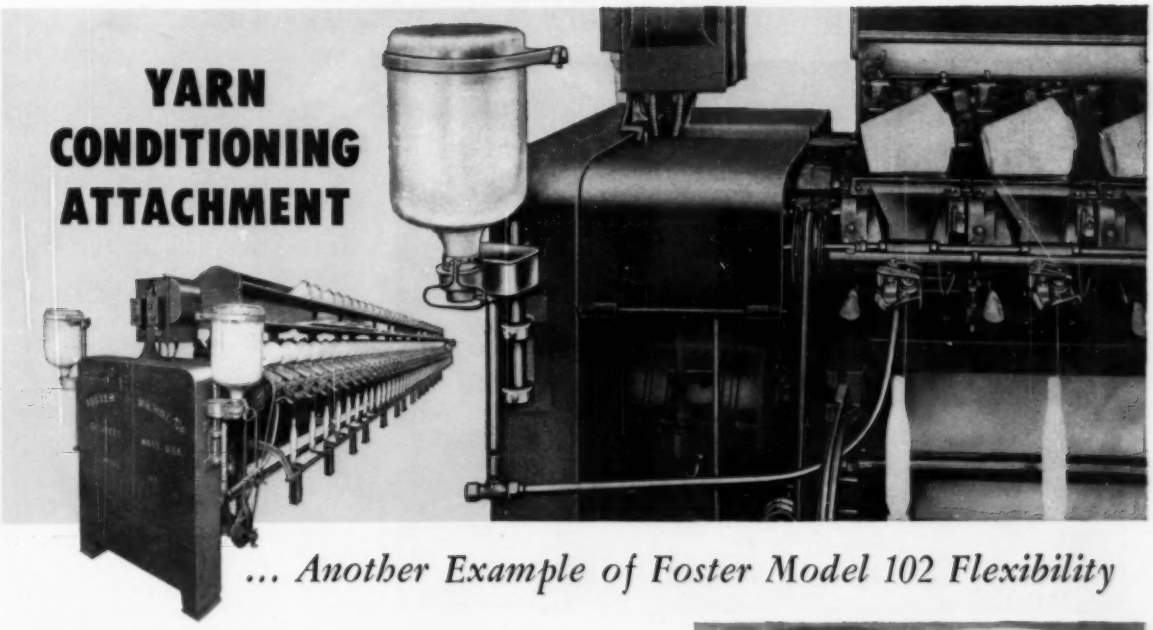
Long-lasting nylon-and-elastic card and single-spindle bands are now being offered by Superior Bands, P. O. Box 6, Anderson, S. C.

Made of a rubber core wrapped with cotton and nylon-filament fibers and then twisted and impregnated with latex, the bands are said to eliminate slippage and give live tension.

The card bands are especially suitable for use with doffer and cylinder, stripper and grinder, and brushes. The single-spindle band can be used for spinning, twisting, spooling, and winding. The bands minimize pulley adjustment.

Circle T-7 on Reader-Service Card

YARN CONDITIONING ATTACHMENT



... Another Example of Foster Model 102 Flexibility

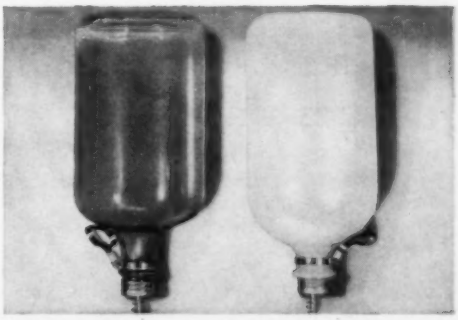
This flexibility feature of the Foster Model 102 Winder is particularly important, because some types of winders can not use yarn conditioning attachments.

This attachment lubricates and softens yarns with a wax or oil emulsion. It restores normal moisture content and gives the yarn a soft hand, so that it will run well in the knitting machine and reduce needle breakage.

Readily applied to existing machines, or supplied with new machines, it is particularly useful when winding mercerized yarn or package dyed yarn. It can condition any type of yarn at any speed within the capacity of the machine — up to 750 y.p.m. It also permits numerous variations in percentage of moisture pickup.

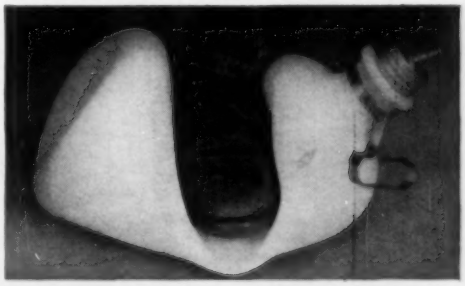
Other flexibility features of the Foster Model 102 are: — 1. Handles any type or count of staple yarn except the coarsest. 2. Produces any cone taper commonly used and any angle of wind from 9° to 18°, with simple and inexpensive changes. 3. Can be equipped to wind knitting cones, warping cones, parallel tubes, dye packages or short traverse cheeses. 4. Winds dyed yarn, even when damp. 5. Can be built to wind up to 7" traverse.

Who knows what you'll be winding a few years from now? Be prepared for the unforseen insofar as possible. Get all the facts about the Foster Model 102. Send for Bulletin A-95 now.



GLASS PLASTIC

PLASTIC BOTTLES now available for Foster Yarn Conditioning Attachment. Weigh only 2 lbs. ½ oz. Glass bottle weighs 6 lbs. 15½ oz.



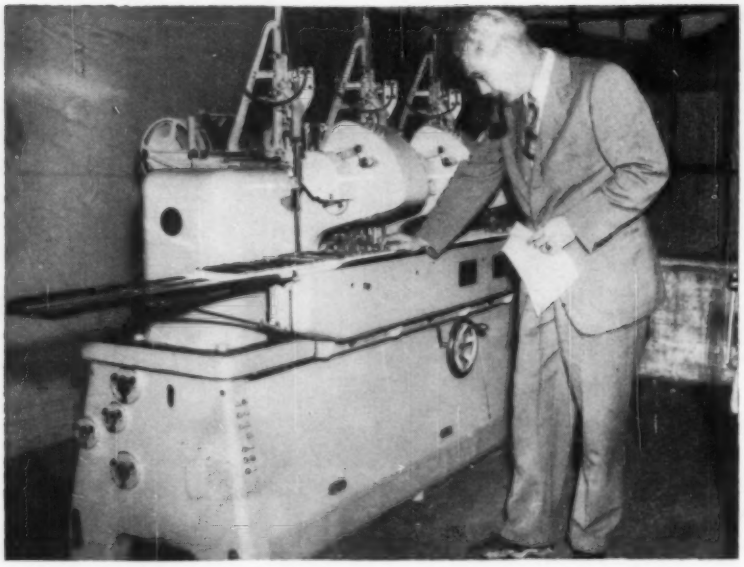
UNBREAKABLE. Does not shatter, if dropped. Lasts indefinitely; eliminates accidents; pays for itself many times over.

FOSTER MACHINE COMPANY

Westfield, Massachusetts, U. S. A.
Southern Office – Johnston Bldg., Charlotte, N. C.

A Winder for Every Textile Purpose

Canadian Representative – Ross Whitehead & Co., Ltd., 1475 Mountain St., Montreal, Que. and 35-37 King St., Toronto, Ont.
European Representative – Muschamp Textile Machinery Limited, Keb Lane Bardsley, Oldham, England



Embroidery-Yarn Winder

An automatic machine for winding embroidery yarn into pull skeins is available from Trubenise (Gt. Britain) Ltd., 39 Park St., London W.1., England.

The machines automatically cut the yarn joining the consecutive skeins, make and fix two tubular labels for each skein, and pack the skeins in three layers of eight into boxes. The output per machine is about 72 skeins per minute.

Circle T-8 on Reader-Service Card

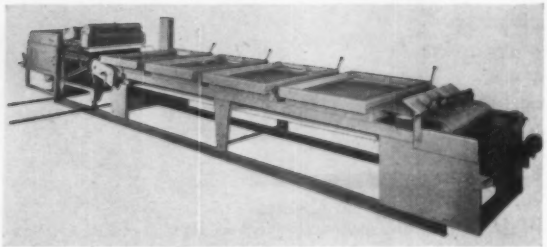
Picking Parts for Looms

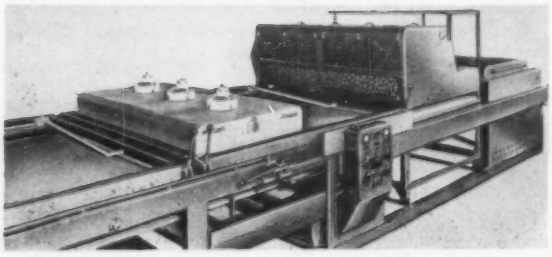
An aluminum pick arm and lug-strap connection for X-2 and XD looms are available from Draper Corp., Hopedale, Mass. The pick arm and connector are joined together with an end connector, Uniball, that eliminates binding during the picking action.

The improved parts are of lightweight all-aluminum construction. Picking action is improved, and wear on all component parts is reduced.

The pick arm is calibrated to simplify making standard power settings. Therefore checking on maintenance of loom settings is easy because the settings can be made visually. The parts fit the linkage parallel.

Circle T-9 on Reader-Service Card





Flock-Printing Machine

A machine that will screen-print in two to eight colors or in several colors and flock has been introduced by Arno H. Wirth, Reutlingen, Germany.

A metal conveyor carries the goods through the machine. A gumming device supplies adhesive to the conveyor to hold the cloth in place. For flock printing, a dry glue is used. An ironing device attaches the fabric to the adhesive. For combination flock and color printing, an infrared dryer is supplied to dry the colors so flock will not adhere to these areas.

Flock is deposited electrostatically by an enclosed self-contained unit. A predryer sets the adhesive sufficiently so that the goods may be rolled up. A final dryer is supplied as a separate unit if desired.

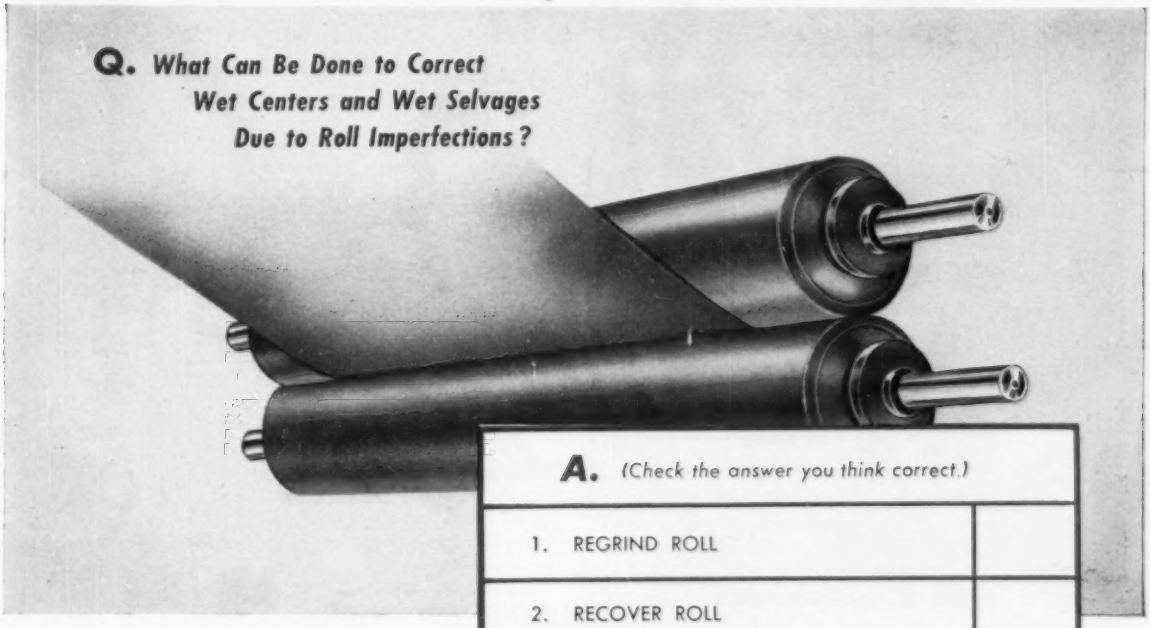
The screen printer, flocking device, and predryer are locked in electrically and mechanically so that one operator has complete control of the machine.

Circle T-10 on Reader-Service Card

STOWE-WOODWARD Maintenance Tips

for better finishing at lower cost

Q. ***What Can Be Done to Correct Wet Centers and Wet Selvages Due to Roll Imperfections?***



A. *(Check the answer you think correct.)*	
1. REGRIND ROLL	
2. RECOVER ROLL	
3. CORRECT THE CROWN	

You'll find the correct answer in these Maintenance Tips

Any of the answers above may be correct, depending on the actual cause of the trouble. Wet centers and wet selvages due to uneven extraction in carbonizing or dyeing result in shaded goods. The trouble is almost always traced to uneven pressure across the face of the squeeze rolls. If the rolls are loaded equally on both ends and the trouble persists, the fault must lie in the roll itself and can usually be traced to one or two causes: uneven wear of the face of the roll, or grinding which does not correctly compensate for roll deflection under operating pressures.

Regrinding will remove minor irregularities of the roll face while those of a more serious nature may require recovering. If the problem stems from excessive roll deflection, the proper crown must be accurately determined.

Your Stowe-Woodward Sales Engineer will be happy to assist and advise if you have problems involving rubber covered rolls in any textile application. His experience in the care, selection and performance of rubber covered rolls is that of an expert. Call him before you place your next order.

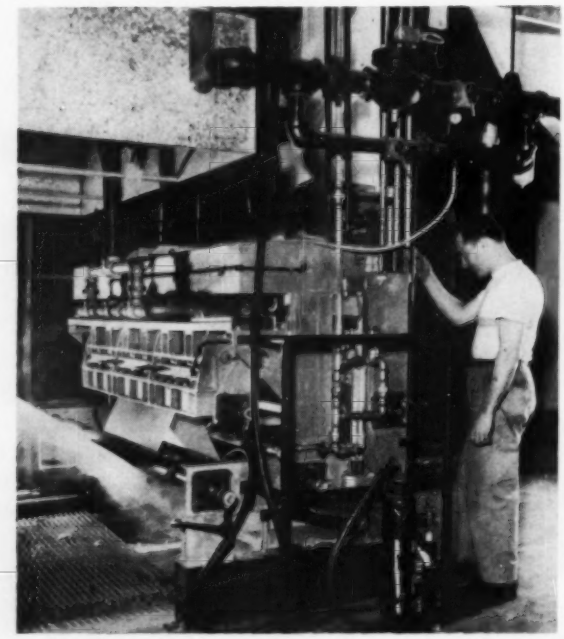
"RUBBER ROLLS with a REPUTATION"

S-W INC.

STOWE-WOODWARD, Inc.

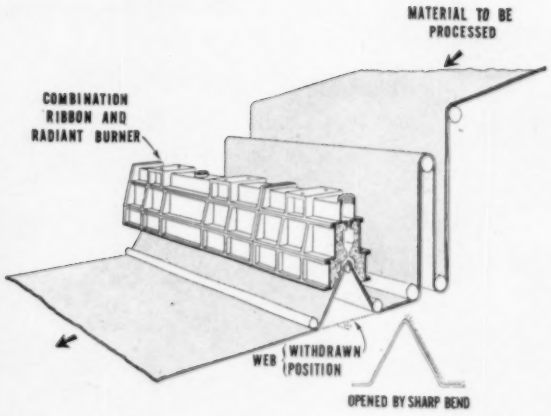
Craftsmen in rubber rolls

NEENAH, WISCONSIN • NEWTON 64, MASS. • GRIFFIN, GEORGIA



Synthetic-Fiber Singer

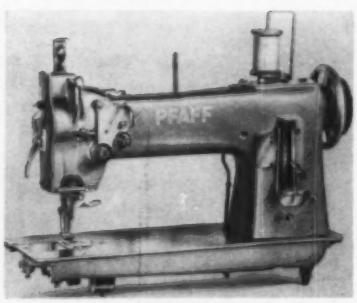
A singer developed by Selas Corp. of America, Erie Ave. & D St., Philadelphia 34, Pa., is particularly suited to singeing synthetic-fiber fabrics.



The singeing is produced by a combination of gas flame and radiant heat from the ceramic lining of the burner. Cloth is angled sharply over a rod mounted well up in the V of the burner, and combustion gases blow away the small beads of plasticized material as they are formed.

Automatic retraction and shielding of the cloth are provided for at stoppages in production. The singer has an 84-in. burner and can be supplied with two burners to singe both sides of the fabric in one run at up to 100 yds. per min. The machines are supplied fully equipped and require only installation in the mill.

Circle T-11 on Reader-Service Card

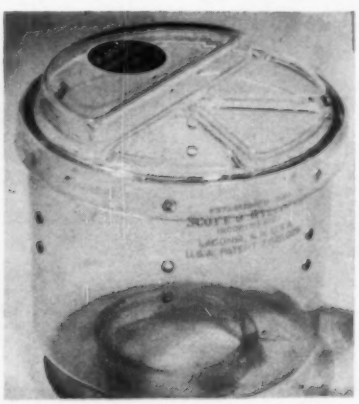


Compound-Feed Sewing Machine

A heavy-duty, high-speed sewing machine has been announced by Pfaff Industrial Sewing Machine Corp. Willcox & Gibbs Sewing Machine Co., 214 W. 39th St., New York 18, N. Y., is the United States representative.

The model, known as 141/134-431, features an improved vertical trimmer that trims cloth edges while stitching. The compound feed insures even delivery of each ply of fabric. Lubrication is automatic.

Circle T-12 on Reader-Service Card



Hosiery-Machine Cover

A plastic cover for Scott & Williams take-down attachments is supplied by Plastic Industries, Inc., Box 224, Athens, Tenn. The cover snaps on the catcher. No screws or fasteners are needed.

The cover keeps oil from dripping into the catcher. Any oil falling on the cover drains off. Oil is kept from the work and picks are prevented.

Circle T-13 on Reader-Service Card

Inlaid-Pattern Hosiery Machine

The argyle-hosiery machine [TEXTILE WORLD, Oct., '53, p. 104] developed by Frank Coile, Athens, Ga., is now being made by Textile Machine Works, Reading, Pa. The machine is now called the Reading CK-A.

One 168-needle machine with a 3¾-in. cylinder produces more than 3 doz. pairs of four-diamond argyles per 8-hr. shift using 100/2 stretch yarn with a rubber top.

Four feeds and up to 16 pattern drums are used to make a variety of patterns other than argyles. Pattern drums also control the needles during heel and toe knitting.

Circle T-14 on Reader-Service Card

THIS IS NO YARN

Clearness alone is no guarantee that a textile lubricant is good. True, it is a vital factor in order to prevent dangerous staining. But equally important is the amount of friction that the lubricant permits, for not only does excess friction lead to eventual machinery breakdown, it also boosts power consumption.

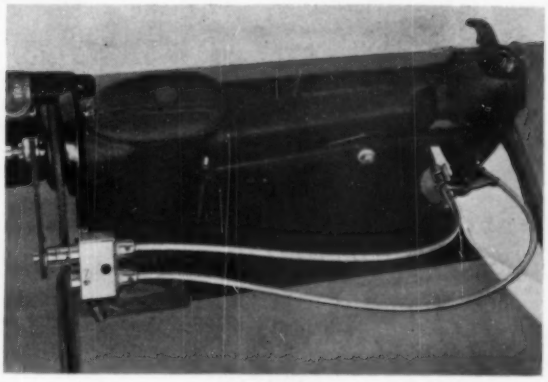
Studies show that 10% of the average mill's selling price is due to power costs . . . so it's obvious that the lubricant that lowers power consumption increases profits.

Each of the seventeen specially tailored Cities Service Glade Oils does just that! By minimizing friction and reducing power loads, they can actually add as much as 2½% to your profits. Moreover, there are absolutely no clearer textile oils available anywhere! For more information, write Cities Service Oil Company, Sixty Wall Tower, New York 5, N. Y.

CITIES SERVICE

QUALITY PETROLEUM PRODUCTS

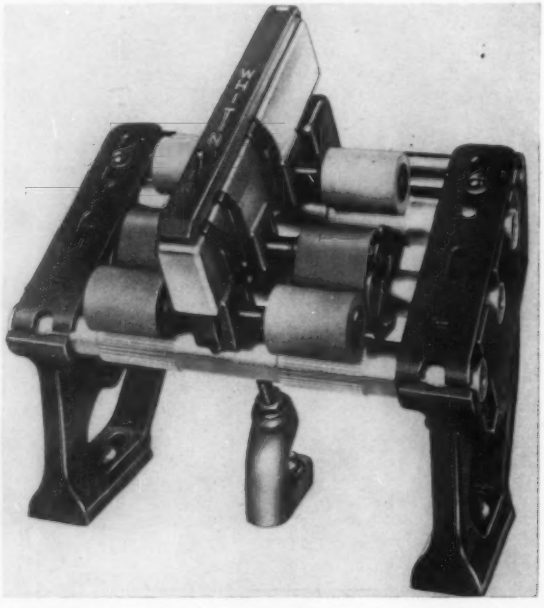
Auxiliary Sewing-Machine Feed



A power-driven attachment that controls the fabric feed to a sewing machine has been introduced by Dura-Bac, Inc., 808 Broadway, New York 3, N. Y.

Rotary feeder wheels of the attachment replace the regular pressure foot of the sewing machine and are raised or lowered by an existing mechanism on the machine. Power is transmitted through flexible shafts from the machine's regular drive. It is claimed that smooth seams are easily sewn by inexperienced operators when the attachment is used.

Circle T-15 on Reader-Service Card



Roll Suspension and Weighting

Whitin Machine Works, Whitinsville, Mass., has announced the Unitrol center-suspension weighting and new top rolls for spinning frames.

The unit has a streamlined top arm for holding the top rolls in correct alignment; the arm contains the spring-weighting mechanism. The front top roll has a rigid shaft that mounts four antifriction bearings; the roll can be covered with any cot material required. The middle and back rolls are nonlubricated. Oil has been completely removed from the drafting area.

Precalibrated springs in the top arm distribute a total pressure of 60 lbs. over the three lines of rolls: 30 lbs. on the front line and 15 lbs on the middle and back lines. Other weightings can be obtained by using different springs.

The weighting is applicable for all staples from the shortest cotton to 2-in. staple. An important feature is that the weighting remains unchanged for any roll setting.

The unit takes up a minimum of creel space; rolls can be easily, quickly, and securely set for different staples; and lintfree construction reduces cleaning and picking time, since the fly is dry and easily accessible. Lubrication is negligible. Work assignments can be increased as much as 30%, and yarn evenness and strength are improved.

Circle T-16 on Reader-Service Card

Self-Cleaning Nozzle

A self-cleaning spray nozzle for textile-mill central-system air conditioners is being made by Carrier Corp., 300 S. Geddes St., Syracuse, N. Y.

Lint that usually piles up in nozzles reduces the capacity of the nozzles and causes fluctuation in room temperature and humidity. The self-cleaning nozzles, called Cant-Clog, have eliminated this condition.

Here's how the flexible diaphragm on the Cant-Clog nozzle works. If lint or other foreign material is caught behind the orifice, pressure from the water immediately builds up and forces the diaphragm to stretch. Then the orifice is stretched and enlarged. In the expanded position, the restrictive particles are easily expelled from the nozzle.

Circle T-17 on Reader-Service Card

CONTINUED ON PAGE 207

Du Pont's "Latyl"* Dyes for "Dacron"* and blends with "Dacron"

FOR BEAUTIFUL FULL SHADES on fabrics of "Dacron" polyester fiber, be sure to use "LATYL" dyes. They were developed specifically for "Dacron" and blends with "Dacron". . . show good resistance to fading from light and atmospheric gas fumes . . . have excellent washfastness. All "LATYL" colors are mutually compatible and may be applied by carriers, by high temperature dyeing, or by the Thermosol method. Technical information is yours by writing E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Division, Wilmington 98, Delaware.

*Reg. U. S. Pat. Off.

Du Pont Dyes

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BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

NEW DYES and CHEMICALS

Wool and Synthetics Dye

Cibalan Black BGL . . . for producing dark grays or solid blacks of excellent fastness to light, washing, and milling on wool, polyamide fibers, and silk. Can be applied to stock, yarn, or piece goods; has good union-dyeing qualities and produces excellent Vigoreux or piece-goods prints. Ciba Co., Inc., 627 Greenwich St., New York 14, N. Y.

Circle D-1 on Reader-Service Card

Boiler-Scale Remover

Ke-Tone . . . added to the water supply at the rate of 1 lb. per 200,000 grains of contained hardness, or 3 to 5 parts per million, whichever gives the higher concentration, will gradually remove deposited scale from boilers and pipes. Algae growth is inhibited in recirculating systems when the product is present. United Chemical Corp. of New Mexico, Hobbs, N. M.

Circle D-2 on Reader-Service Card

Thickener-Stabilizer

Wicathica . . . a synthetic thickener and stabilizer for water-phase plastic and rubber emulsions. An acrylic derivative, the product works well over a wide pH range to form stable suspensions of latex, polyvinyl acetate, and acrylic polymers. Wica Chemicals, Inc., P. O. Box 506, Charlotte, N. C.

Circle D-3 on Reader-Service Card

Silicone Water Repellent

Norane Silicone . . . a concentrated silicone emulsion recommended for producing nonoily spot and stain-resistant finishes on acetate, viscose, nylon, cotton, and wool fabrics. Improved abrasion resistance, tear strength, and sewability are claimed for fabrics finished with the product. Sun Chemical Corp., Warwick Chemical Co. Div., Long Island City, N. Y.

Circle D-4 on Reader-Service Card

Water Repellent for Glass

Dow Corning T-31 . . . a water-dilutable silicone finish for glass cloth, can be mixed with epoxy, phenolic, polyester, and silicone resins to give a variety of effects with one basic finish. Does not require curing, but drying the padded cloth at 250 to 300° F. for a few minutes is recommended. Dow Corning Corp., Midland, Mich.

Circle D-5 on Reader-Service Card

Direct Dye

National Solantine Blue Green BFL . . . a nondusting lightfast direct dye producing bluish-green shades on cotton and rayon. Dischargeable with neutral and alkaline print pastes. Fast to light, rubbing, alkalis, dry-cleaning, and sea water. Very good fastness to washing and perspiration, and good fastness to acids, mercerizing, and hot pressing. Suggested for carpet yarns, hosiery, upholstery, suitings, and materials to be rubberized. National Aniline Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.

Circle D-6 on Reader Service Card

Insulating Tape

Lab-wrap . . . purified asbestos tape $\frac{3}{32}$ in. thick, offered in widths of 1, $1\frac{1}{2}$, and 2 ins. in rolls 100 ft. long. Claimed to be superior to asbestos paper for wrapping chemical apparatus, glass-blowing operations. Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa.

Circle D-7 on Reader-Service Card

Premetallized Dye

Lanasyn Yellow 3GL Pat. . . . produces greenish-yellow shades from neutral baths. Recommended for wool and nylon dyeing. On nylon, fastness characteristics are particularly good; on wool, lightfastness rates 6 to 7 on Fade-Ometer tests. Sandoz Chemical Works, 61 Van Dam St., New York 13, N. Y.

Circle D-8 on Reader-Service Card

Yarn Finish

Nopco 2221-P . . . a water-insoluble ester developed as a softener ingredient in rayon tire-yarn finishes. Soft finishes with low scroop and little fiber-to-fiber friction are characteristic of the product. Nopco Chemical Co., Harrison, N. J.

Circle D-9 on Reader Service Card

How To Degum Silk on a Cascade Machine

Silk yarns can be handled successfully from degumming through finishing on cascade dyeing machines by the following method:

Fifty pounds of silk dupion yarn are distributed evenly on a seven-arm cascade machine. Cold water is added and brought to 120° F. with steam. The steam is shut off and the water level adjusted to 7 ins. in the tub. A pint of Orvus ES paste and $3\frac{1}{2}$ gals. of Pre-Boil Compound are added to the bath.

Circulation of liquor is started through the skeins, and the skeins are turned three times forward and once backward by using the manual switch on the machine. It is important that this turning procedure be used every 15 mins. or each time any additions of chemicals are made to the bath.

The temperature is held at 110 to 120° F., and the skeins should be moved manually on the arms every 5

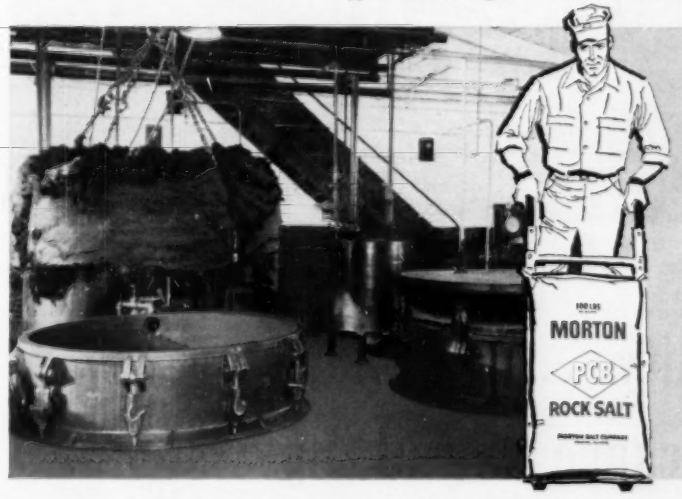
CONTINUED ON PAGE 207

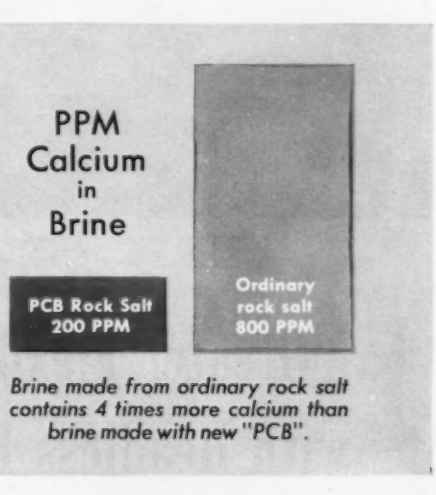
The method described was developed by Scher Bros., Mfg. Chemists, Clifton, N. J.

New! Morton "PCB" Rock Salt

for low cost, low calcium brine!

Saves money on sequestering agents! Eliminates streaks and off-shading! Increases color intensity!




PPM Calcium in Brine
PCB Rock Salt 200 PPM
Ordinary rock salt 800 PPM
Brine made from ordinary rock salt contains 4 times more calcium than brine made with new "PCB".

Morton "PCB" Rock Salt, a patented process for making low calcium brine, combines screened southern rock salt with chemicals that prevent the harmful calcium compounds that occur naturally in rock salt brine from going into solution.

As the chart above shows, "PCB" Rock Salt brine contains *75% less calcium* than brine made with untreated rock salt. (The less than 200 PPM calcium in "PCB" brine is inactive.) What's more, "PCB" can be used in your present rock salt dissolving equipment without additional construction or extra labor.

Available in 100-lb. bags or bulk, "PCB" is specifically recommended when brine is used in dyeing, rawstock, package, beam, beck or jig with either sulphur, direct or naphthol dyes. ("PCB" also can be used effectively in your water softener.)

"PCB" BRINE

● Saves money on sequestering agents ● Improves crock fastness with naphthol dyes ● Increases color intensity where sulphur dyes are used ● Results in softer finishes, more even shades ● Aids in retarding corrosion ● Is far less expensive than brine produced from purified low calcium evaporated salt.

FREE! Let a Morton Brine Engineer take a sample of the calcium content in your water and brine. He'll have it analyzed and tell you how much you can reduce the calcium content by using "PCB" Salt.

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*I would like a Morton Brine Engineer to make a calcium analysis of water and brine in my plant.*_____

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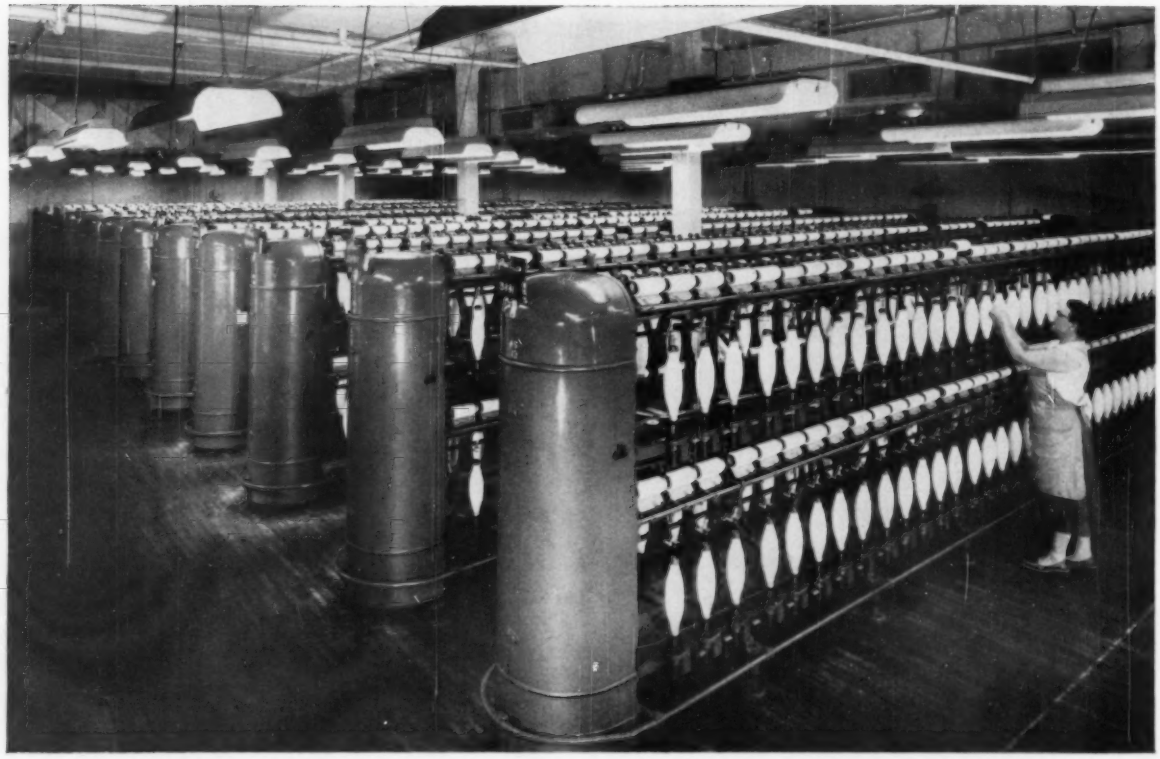
City_____ State_____



Universal Headless Package Unirail Uptwisters at the Atwater Division of Hess, Goldsmith & Co., Inc., Plymouth, Pennsylvania. Shown uptwisting nylon with even transfer from pirns to large headless packages.

"Greater Flexibility . . . Top Quality Yarn with Headless Package Unirail® Uptwisters"

Take the word of management at the Atwater Division of Hess, Goldsmith & Co., Inc., Plymouth, Pennsylvania

The Atwater Division of Hess, Goldsmith & Co., Inc., throws yarns of many different deniers and twists for many customers. A flexible uptwister that will produce top quality yarn is of obvious advantage in this type of operation.

In the words of Mr. E. J. Schellenberg, Jr., of the Atwater Division:

"We are very pleased with our two installations of Universal Headless Package Unirail Uptwisters. They produce top quality yarn, and are extremely flexible allowing for many different yarn constructions. The labor cost reductions of large headless packages are very substantial, and the advantages gained by superior yarn quality are even greater."

For your own operations

you'll find the Universal Headless Package Unirail Uptwister a profit-paying investment. For further facts on the Universal Headless Package Unirail Uptwister write for free Bulletin 501 or see your Universal representative. 23.5.18

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Winding and Twisting Machinery for Natural and Synthetic Yarns

QUESTIONS and ANSWERS

▶TEXTILE WORLD'S editors are at your service to help solve your problems in yarn manufacture, weaving, knitting, dyeing, finishing, or other textile operations. If you have a technical problem bothering you, send it along to the Editor, Questions and Answers, TEXTILE WORLD, 201 E. Coffee St., Greenville, S. C.

Wider Tricot Requires New Finishing Equipment

Technical Editor:

We are installing 168-in. tricot machines. Our present finishing equipment processes cloth from 84-in. machines. What changes in equipment do we need? (9951)

Gray- and finished-cloth examining and batching equipment will have to be purchased or modified to accommodate the wider cloth.

Whatever your previous procedure with the narrower tricot has been, you will have to tack the wider cloth, selvage to selvage, on all constructions with the possible exception of 15-den. nets and laces. This job can be done continuously on a chain-stitch sewing machine fitted with selvage-uncurling scrolls.

The job can also be done by intermittent tacking with a machine or by hand to join the selvages together about every 18 ins. with a loop of thread. The first method is best because the tacking thread can be continuously and automatically removed.

The contracting or hot-water presetting equipment should be wide enough to accommodate the tacked cloth, which is about 60 ins.

Your regular winch dyeing machines will require no modification, and the same number of ends of tacked cloth can be run. However, the liquor-to-goods ratio will be halved; and dyestuffs must be carefully chosen with this fact in mind. Power for the winch drive may have to be increased to take the doubled weight of cloth.

A regular extractor is then used, and the cloth is untacked. If a radiant-heat tenter is used, the goods can be heat-set and finished on the tenter in the next operation.

How To Calculate Yarn Diameters

Technical Editor:

We spin yarn from 1s to 60s and figure that yarn-diameter measurements will help us in our calculations in laps per inch, picks per inch, and snick-plate settings. What is the method for finding the diameter? (9950)

Yarns can be measured with the micrometer and microscope, but the easiest way is to wind enough coils onto a 1-in. length of rod and then count the coils and divide 1 in. by the number of coils. The result depends, however, on whether the particular yarn was wound on just right without being crowded or with spaces between the coils.

Two persons doing the winding may not come out with the same results, and it is quite understandable that several yarn-diameter formulas were developed independently.

Four of the tables are shown below:

Source	Ashenhurst	Universal	Dickson	Duerst	
	All types	All types	All types	American	Egyptian
Cotton Yarn No.	Dia. (ins.)	Dia. (ins.)	Dia. (ins.)	Dia. (ins.)	
1	.0375	.0383	.0358	.0426	.0407
5	.0167	.0171	.0160	.0187	.0180
10	.0118	.0121	.0113	.0131	.0127
15	.00967	.0099	.0094	.0106	.0101
20	.00838	.00855	.0080	.00905	.00870
30	.00685	.00700	.00654	.00727	.00709
50	.00530	.00541	.00506	.00553	.00535
100	.00375	.00383	.00358	.00374	.00364

The formulas for the four methods are:

$$\text{Ashenhurst yarn diameter} = \frac{.0375}{\sqrt{N}}$$

$$\text{Universal yarn diameter} = \frac{.0383}{\sqrt{N}}$$

$$\text{Dickson yarn diameter} = \frac{.0358}{\sqrt{N}}$$

$$\text{Duerst yarn diameter} = d\left(\sqrt{1 + 20{,}000/NF} - 1\right)$$

Where d = diameter of fiber = .00054 in. for Egyptian cottons or .0065 in. for American cottons

F = micrograms per inch = 3.4 for Egyptian or 4.5 for American

Synthetic Slasher Rolls Need More Pressure

Technical Editor:

We are thinking of adding synthetic-rubber covering to our slasher rolls. Are these rolls satisfactory? (9956)

Here's what the superintendent of one mill says about synthetic-rubber-covered rolls:

"We are pleased with the synthetic type of rubber covering for both finishing and back squeeze rolls. We use them with both regular and pneumatic loading. We add 200 lbs. of additional weight to our regular 500-lb. rolls for best results.

"We have used some of the rolls for five years and have never had to rebuff a roll.

"We get a little more size pickup on the rubber rolls than with wool blankets. We also get more-uniformly sized warps with the rubber rolls because there is a lot of difference in the way warps are sized when blankets become aged."

Six Ways To Stop Size Dropping in Slashers

Technical Editor:

We have a seven-drum slasher, and in slashing we find that the first drum becomes covered with size. The dried size often falls into the yarn and causes trouble. The first drum is tinned copper, which we heat to 150° F. We slash both filament and spun-rayon yarn as well as cotton. Do you have any suggestions to stop the trouble? (9957)

There are six ways to solve your problem:

1. Change your first drum to a stainless-steel one. These drums create less tendency for the size to stick.

2. Where 15-lb. cylinders are used, there may be a tendency to stick; but this can be reduced by increasing the temperature, which requires an increase of pressure up to 35 or 50 lbs. Your temperatures with filament are limited, but you can run a little higher than normal.

3. For filament yarns, you can cover the first two or three cylinders with cheese cloth or a similar cloth to serve as a cloth-covered iron and allow higher temperatures to be used.

4. Use a mirror finish for slashing filament yarns.

5. Use Teflon-coated cylinders. This practice allows much faster operation with no tendency to stick, even at lower temperatures. The ideal setup however, is to have higher temperatures with Teflon on the first two or three cylinders. Teflon-covered cylinders have been running in mills for four years without re-covering. Teflon is tricky to apply, and the cylinders must be carefully handled after covering. The cost to cover a cylinder runs about $100.

6. Part of the problem in size sticking lies in the size mixture itself. Certain solutions will not stick at certain temperatures, while some sizes allow a wide temperature variation. Some mills have hit the right combination of temperature and size mixture and can run successfully with standard rolls, but other mills contend that this method requires too much accuracy and time and use the other methods.

How To Get Better Nub Distribution

Technical Editor:

We are using a nub box to distribute nubs on the last cylinder of our woolen cards and are bothered with the nonuniform distribution of nubs throughout the yarn. Do you have any suggestions? (9933)

The correct place to attach the nub box is above the top worker roll on the second breaker. You can also place it above the next roll below the intermediate feed table.

Increase the distance between the workers and cylinder from where the box is mounted. If you normally use a 28-gauge setting, switch to 24 gauge. Nubs have to be carded to a certain extent in the blend without destroying them. Because the workers are raised, the nubs are embedded in the web. If the nubs are carded too much, they will lose their orginal appearance and look like slubs.

Don't use nubs that are too soft. Check the nub-attachment mechanism. If the speed of the feed roll of the nub box is synchronized with the speed of the worker above which the attachment is set, then run the feed roll slower than the speed of the worker on the card. Check to see that the agitator pushes the nubs down against the feed roll. A card running too fast can cause you to lose too many nubs.

Fly and Clearer Waste Cause These Slubs

Technical Editor:

We are having excessive slubs and gouts in our yarn that seem to appear at regular intervals. What can we do about it? (9907)

Two types of waste cause this trouble: loose fly and clearer waste. When you classify the two types under a glass and check the frequency at which they occur in the yarn, you can get some idea where they are coming from.

The loose fly, of course, is occurring at the spinning frame; for some reason, the fly is stirred up every now and then and some of it tags onto the running ends.

There any number of ways it could happen. Among them are: (1) the overhead cleaners may be circulating the frames too seldom; (2) the spinner or cleaner may be stirring up fly or even leaning against the ends with a dirty apron; (3) the doffers or oilers or whoever cleans under the frame, may be stirring it up; (4) the roving layer may be laying up roving that has gathered fly while it was stored and the overhead cleaner is blowing it down on the yarn; (5) eyebrowing rollers could cause it; (6) static resulting from too-low humidity might cause it; and (7) blowing down walls and ceilings.

About the only remedy for loose fly is to spend a little time around the frames and see if you can spot some of these things occurring.

The loose fly occurring at intervals and twisted into the yarn gets on the roving and goes through the spinning rolls.

To stop this type of gout, you would need to watch the creels and be sure that (1) no roving with fly on it is laid up; (2) the creels, particularly the top creel boards, are cleaned regularly and no fly is allowed to accumulate; (3) the overhead cleaners are working well and circulating often enough to keep fly blown off; (4) overhead cleaning and underframe cleaning are done with the frames stopped and tags of fly picked off the roving before a frame is started up.

The clearer waste comes from the slubbers and perhaps from drawing. A good bit of fly also occurs at longer intervals, indicating that a little more care should be observed by the slubber tenders to keep fly off the running ends of the roving. As strictly a spinning-room problem, though, the only way to stop the clearer-waste gouts is to have roving running in the creels inspected more closely and the bad bobbins taken out.

The clearer-waste gouts occurring at intervals are your real problem. The loose-fly faults are very minor defects compared to them. The fact that they are in the roving undoubtedly accounts for their hitting the spinning room on random frames.

Perhaps if the spinning-room overseer explored the problem with the card-room overseer to analyze some of the deffective yarn to establish the interval of occurrence and find some of the roving in the spinning-frame creels, they could get together on stopping it. If the problem is giving much trouble, it might be worth while to use a special creel inspector for a while until the trouble is stopped.

How To Improve Package-Dyed Yarns

Technical Editor:

How can we improve the back winding of our package-dyed yarns? We have the most trouble with direct dyes aftertreated with resin compounds. (9947)

A good nonionic softener applied in a final rinse bath might help your trouble. The resin-type afterfixing compounds tend to harshen the yarn, and a lubricant would partly overcome this trouble.

Check the package density. If your yarns are dyeing evenly all the way through, the winding is all right.

When you apply a softener, circulate the liquor from the inside out to get as much fluffing action as possible. Do not overdry the yarn, and condition it for 24 hrs. at 65% r.h. before coning.

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The way these dresses look after the skimpiest of ironings, you'd think they were twins too! Yet one's been shrugging off wrinkles during a lifetime of washdays. Which all goes to show that cottons—or blends of cottons—hold onto the wrinkle-resistant enthusiasm of their youth when treated with RHONITE R-1 resin. Our wise little owl can see this spells luxury wear with the briefest of care.

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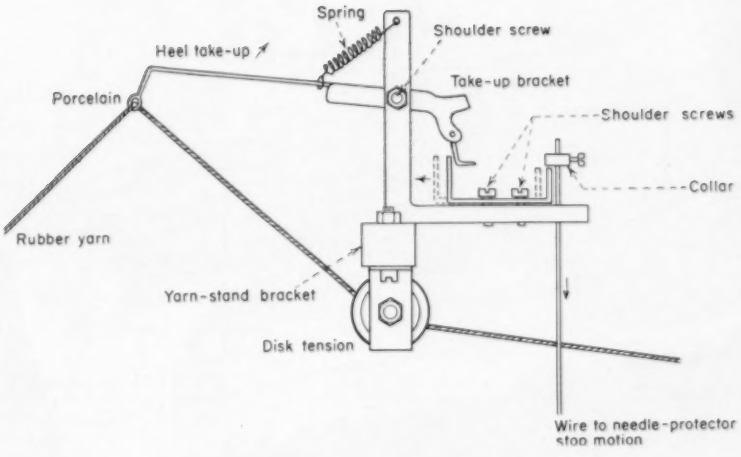
KINKS and SHORT-CUTS



Rubber-Yarn Stop Motion Is Now Automatic

When the rubber yarn breaks or runs out on our hosiery machines, the fabric on the needles is so slack that smash-ups result; needle breakage is high.

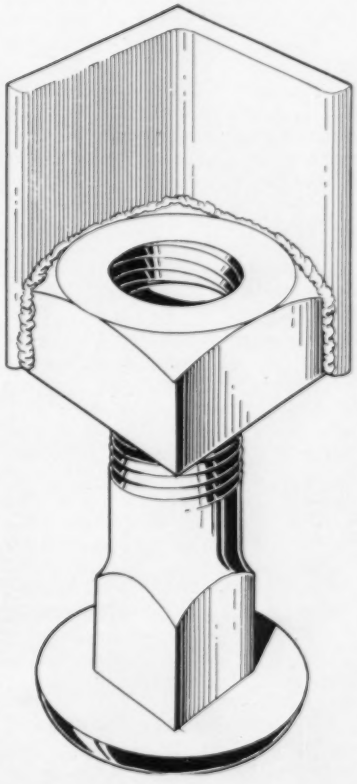
The machines are not equipped with electric stop motions, but we have devised a mechanical stop motion that works on the needle protector when the rubber yarn cuts out. The attachment fits on the yarn-stand bracket and consists of an L-shaped bracket with a heel tension take-up from an old hosiery machine.

To make this device, drill a hole about halfway up the upright bracket arm and fit the take-up to the bracket with a shoulder screw so that the take-up bracket balances freely. Drill two holes on the horizontal leg of the L-shaped bracket, and tap the holes to receive shoulder screws.

Cut a slot the width of the screw shoulders down the length of a 5x1x⅛-in. length of aluminum. Bend tabs on either end of the aluminum piece, and fit the piece to the bracket with the shoulder screws so that it slides freely along the bracket. See that one end of the slide is under the heel of the take-up.

Drill a ⅛-in. hole in the L-shaped bracket close to the edge of the rear tab on the slide. A collar, screwed to a wire pushed through the ⅛-in. hole, should rest on the rear tab. The lower end of the wire is connected to the needle-protector stop motion.

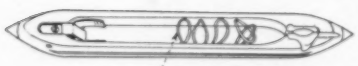
Fit a disk tension to the underside of the yarn-stand bracket, and run the rubber yarn through the tension and the heel take-up porcelain. Adjust the spring from the top of the L-shaped bracket to the take-up so that the arm will be pulled upward and the slide moved from the collar when the rubber yarn cuts out. Adjust the disk tension while the machine is running until the rubber runs smoothly and the heel take-up remains stationary. (K-2897) *N. C. Vocational Textile School, Belmont, N. C.*



Use Carriage Bolts To Make Adjustable Bench

Here's how to make the legs of a light bench conform to the roughest of floor surfaces:

Weld a nut in the bottom of each angle-iron leg, and screw a carriage bolt into the nut. Inverted, the carriage bolt is used to adjust the height of the leg. Install the nuts and carriage bolts on all four bench legs. The ball tops, sitting on the floor, will turn easily when the bolt is turned with a wrench that fits the square shank. The bench will rest securely on almost any floor. (K-2903) *The Stabilizer*



Nylon loops pegged into the walls of the shuttle

Nylon Loops in Shuttles Reduce Shuttle-Fur Costs

We were having a lot of broken filling on looms with shuttles running fur and bristles. Broken filling was caused when the fur wore and the tension on the filling was reduced; the filling ballooned off the bobbin and broke.

The bristles caused other broken filling. When the shuttle spring wore, the filling bobbin dropped down on the bottom bristle and broken picks or mispicks were made in the cloth.

To improve this condition, we removed the fur and the bristles from both walls of the shuttle. To add tension to the filling, we now use nylon twine for loops. The twine is nylon break-tested at 40 lbs.

The nylon loops extend fully across the inside of the shuttle. We use three loops in the front wall of the shuttle and two in the back wall. More loops could be added for greater filling tension.

To put a loop in a shuttle, we drill two small holes in the shuttle wall 1 in. apart with one hole directly over the other. Then we pull each end of the loop through the two holes with the loop on the inside of the shuttle. We drive pegs into the holes to fasten the loops just as we fasten bristles. All loops are put into the shuttle the same way over the front-center area of the shuttle.

Using the nylon loops has reduced our cost on shuttle fur, which was high. Our cloth quality is improved because we have fewer mispicks and less kinky filling. (K-2840) *W. T. Henderson, Trion, Ga.*

Best-Kink Award for February

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

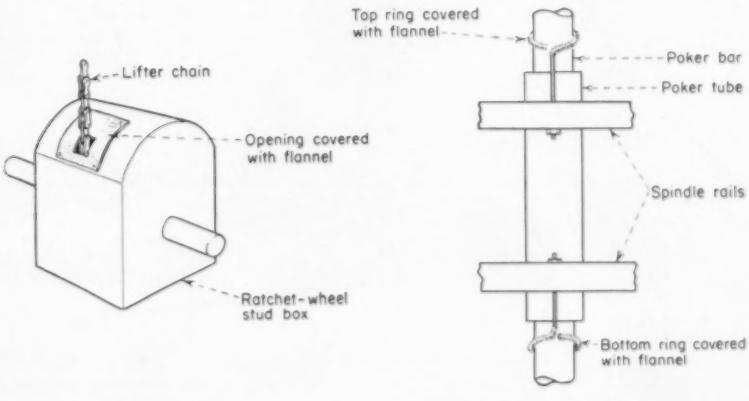
If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answers in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

The best kink for February, according to TEXTILE WORLD reader-judges, was:

"Roving Cycle System Saves $6,900 Annually"

By Lewis P. Scarboro, Trion, Georgia

Mr. Scarboro is being sent a check for $25 with the compliments of TEXTILE WORLD.



Flannel Guards Stop Yarn From Sloughing

After installing new spinning frames, we began to have trouble from yarn sloughing off bobbins being made on these frames. An investigation showed that fly getting into the ratchet-wheel stud box or into the poker-bar tubes caused the sloughing. The fly retarded the motion of these parts.

We quickly and simply solved the stud-box problem by placing a piece of flannel around the lifter chain over the opening into the box. We used screws to fasten down the flannel, but glue probably would do just as well. Free movement of the lifter chain is necessary.

Next, iron rings covered with flannel were placed around the poker bars near where they enter the poker tubes just outside the ring rails. The rings are attached to the ring rails as illustrated.

Since we devised and installed these attachments, sloughing has no longer been a problem. (K-2933) *I. Jesudus Abraham, India*

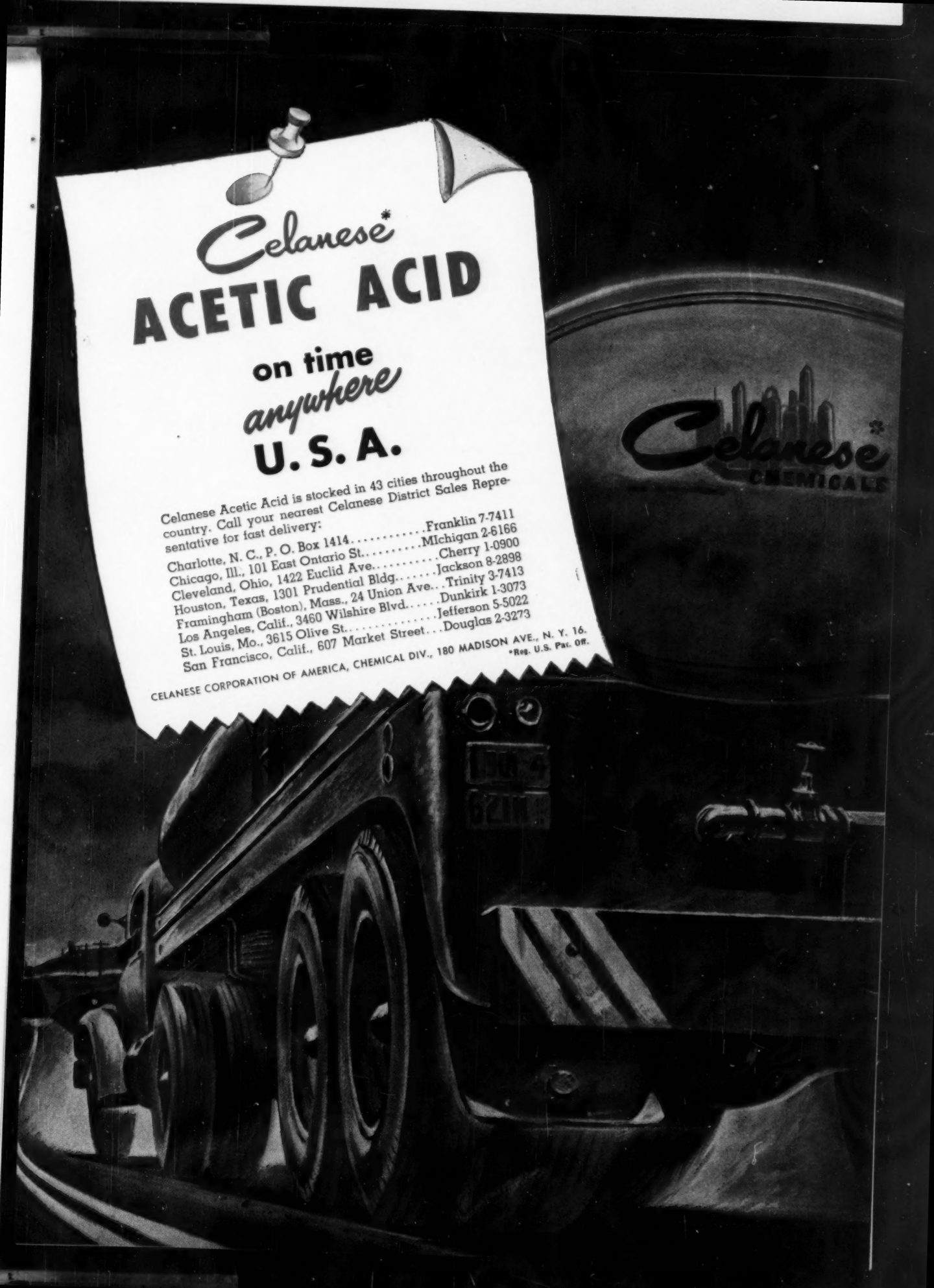
Colored Light Indicates Correct Cloth Length

We make our knitted cloth rolls all the same length to help the dyer and finisher and to check our quality. We use a predetermined stop counter to stop the machine when the required length of cloth is knitted.

The counter is attached to the bottom stationary ring of the machine. A cam, fixed to the rotating ring of the take-up attachment, acts on the lever of the counter and records the number of revolutions of the cylinder.

We have attached an insulated wire from the counter connection to the stop-motion circuit. This wire is connected to a lamp on the front of the machine.

We have painted the lamp blue to distinguish it from the red lamps that indicate a broken end of yarn or a faulty needle. (K-2851)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CHEMICALS

Repair Thread Cutters To Stop Jerk-Backs

On our Draper XD looms, we run a lot of very fine filling yarns such as 70-den. nylon. This yarn is rather slick and tends to make jerk-backs. We also run a lot of Fiberglas yarn on the looms, and it too makes jerk-backs.

To add to the bad jerk-back condition, we often run 37-in. cloth on 50-in. looms. The slack in the filling between the temple and the shuttle box hangs on the lay and makes jerk-backs. The filling used to hang particularly bad on leather strips tacked on the lay to make the temple thread cutter work.

To eliminate the jerk-backs, we removed all the leather from the lay. Then we glued brown paper from the shuttle-box mouth to the cloth. We put several coats of varnish on the paper and now add a new coat of varnish at each warp-out.

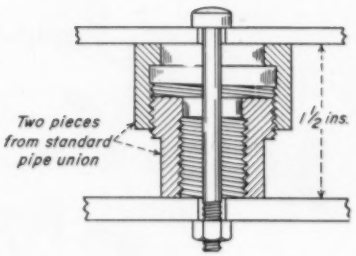
To be sure the temple thread cutter was moving to its full stroke, we put only one strip of carefully trimmed leather on the lay. This leather was also varnished.

But using only one strip of leather for the thread cutter left the danger of cutting the reed with the tip of the thread cutter. To eliminate this danger, we added leather to the thread cutter itself.

We bored two $\frac{1}{8}$-in. holes in the bottom surface of the thread cutter that the lay strikes. Then we fastened a strip of leather to the front of the thread-cutter surface with two rivets.

With this setup, we adjust the temples to the desired position to hold the cloth firmly and leave them in that position. The thread cutters do a better job of cutting, and there is no danger of jerk-backs.

When we receive a new order of temple thread cutters now, we have them fixed with the leather and rivets before they are put in our supply room. (K-2801) *C. M. Whitcher, Midland, Ont.*



Pipe Union Makes Effective Shim

When used as a shim, a pipe union will maintain gaps rigidly. The threads make adjustment possible for a range of about $\frac{1}{4}$ in. The arrangement is substantial and looks good. Depending on the distance desired, any size union can be used.

For example, as shown in the illustration, we required a gap of about $1\frac{1}{2}$ ins. for bolting some steel shelving to a wall. We used two parts of a union and put the bolt through the opening. The bolt, when tightened, secured the union to hold the gap permanently. Now we have no more loose, shaky gaps between our steel shelving and the wall. (K-2806) *W. F. Schaphorst, Newark, N. J.*

$500 for Best Kink in 1956 - - - $25 for Best Kink Each Month

Plus $5 to $10 for Every Kink Accepted

What Is a Kink?

Any idea that will

- **Cut costs**
- **Improve quality**
- **Reduce work**
- **Increase production**
- **Make work easier**

The idea may be one for improving machines, some attachment for a machine, a short-cut way of doing something, a labor-saving device—any idea at all that helps a mill man run his job better or easier.

Send in your Kink now. There is always a contest going on.

RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1956.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published.
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kinks, and their decision will be final. In cases of ties, duplicate prizes will be awarded.

Send Kinks to:
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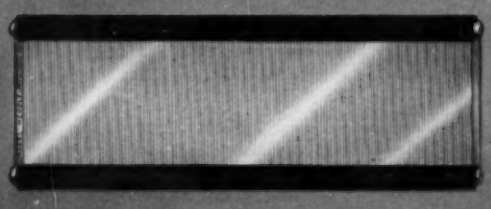

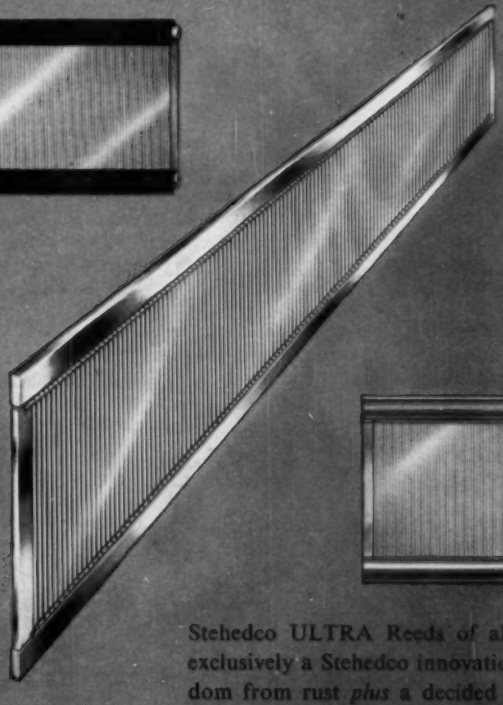

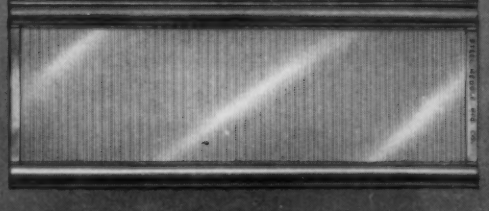

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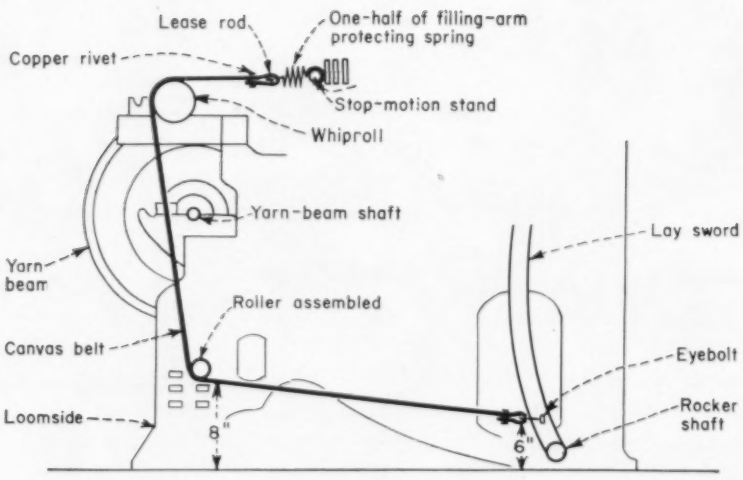


Vibrating Lease Rod Separates Stuck Yarn

We had a lot of trouble weaving cotton sheeting from 20s warp and filling yarn. The yarn was sticky because it was not sized properly. The warp ends stuck together and broke behind the drop wires at the looms. We used a comb in the warp back of the drop wires, and it helped conditions but did not fully eliminate the broken ends.

About two months ago, we rigged up one of our Draper X-2 looms with a vibrating lease rod to break up the stuck ends in the warp. The idea worked so well that we now have the lease rods in all our X-2 looms and XL looms.

To make a lease-rod attachment, we use the following material: two canvas spinning-frame belts ¾ in. wide and 62 ins. long, four copper rivets with burrs, two ¼x6-in. machine bolts, four large cut washers, two pieces of ¾x3¾-in. conduit for rollers, one ⅜x1-in. lease rod long enough to extend 4 ins. beyond each selvage of the warp, two eyebolts, and one filling-arm protecting spring cut in half.

To put the parts together, we put one end of a canvas belt through an eyebolt, make a 1-in. loop, and rivet the loop together with a copper rivet. Then we fasten the eyebolt to one lay sword.

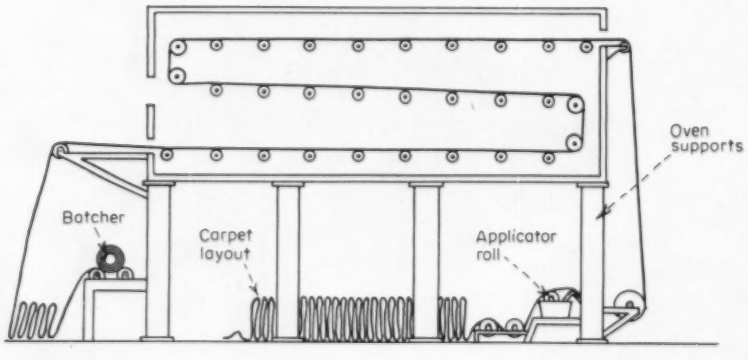
We assemble the conduit to the 6-in. machine bolt to make a roller. The bolt and roller are fastened inside the back of the loomside about 8 ins. from the floor. Large washers at each end of the conduit form guides for the belt when it is put over the roller. The canvas belt runs from the eyebolt in the lay sword, over the roller, outside the yarn-beam shaft, and then up over the whiproll.

The crankshaft is turned to position the loom lay at front center. Then the canvas belt is pulled taut between the whiproll and warp stop-motion stand. The strap is cut off 5½ ins. from the whiproll. A 1½-in. loop is formed by riveting the belt.

The warp is leased out as for one-half of an end-to-end lease, and the lease rod is run through the loops in the canvas belt so that the warp is divided into two halves. One end of half the filling-arm protecting spring is fastened to the loop in the canvas belt, and the other end is fastened to the warp stop-motion stand.

The second canvas belt is fastened to the other side of the loom in a similar way.

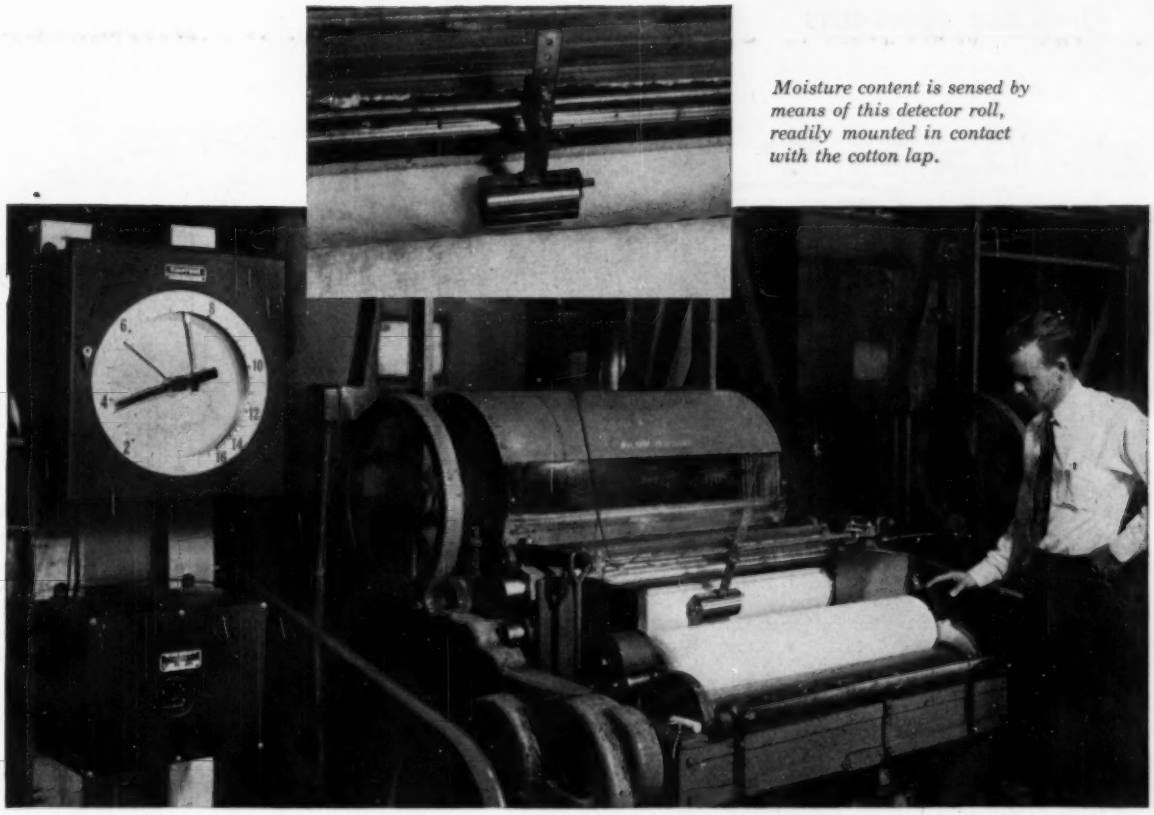
Now, when the loom is in operation and the lay moves to front center, the lease rod is moved backward in the split warp. Then when the lay moves away from front center, the pieces of filling-arm protecting spring pull the lease stick forward. This constant vibration of the lease stick keeps the warp ends going through the drop wires separated. Therefore we have fewer broken warp ends and fewer loom stops. (K-2739) *Paul Dorofy, Columbus, Ohio.*



Overhead Curing Oven Saves Floor Space

We had a space problem at our plant when it became necessary to add a coating machine and a 20x50-ft. drying-and-curing oven. By installing the oven over the coating machine, as illustrated, we were able to utilize available space to accommodate the coater and at the same time provide for adequate working space without building an additional room.

With this setup, we have plenty of room for continuous processing of 15 12x100-ft. rolls of carpet sewed end-to-end, and there is no stoppage between runs. (K-2906) *R. B. Taylor, Greenville, S. C.*



Moisture content is sensed by means of this detector roll, readily mounted in contact with the cotton lap.

***Moist-O-Graph** instrument, mounted at left, records moisture content of picker laps, at Joanna Cotton Mills, Joanna, S. C.*

New way to improve uniformity of cotton lap

You can now get continuous, automatic recording of lap moisture content at the picker . . . with the electronic *Moist-O-Graph* system.

It's as simple as this. To keep constant cotton content in picker laps, you have to know how much moisture is present. And you need this information accurately, immediately and continuously.

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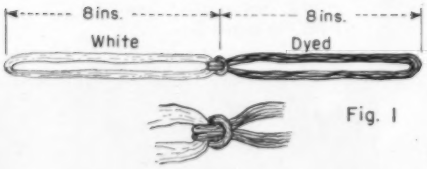


Fig. 1

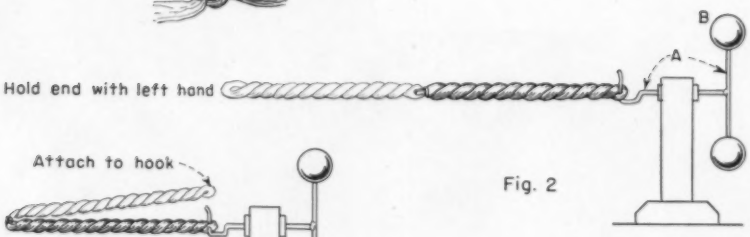


Fig. 2

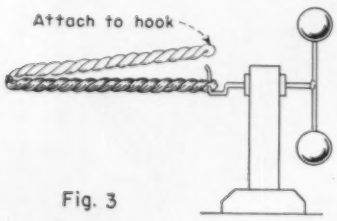


Fig. 3

Fig. 4

Make a Spinning Hook for Twisting Skeins

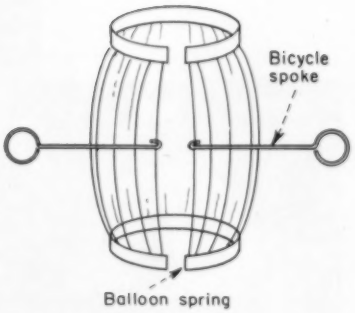
Where no motorized twist tester is available, a simple hand-operated spinning hook will save you the trouble of tediously hand-plaiting a white skein with a dyed skein for wash testing.

The spinning hook, Fig. 2, is constructed of light-steel rods *A* and round weights *B* mounted so that the hook revolves easily when the weights are spun.

To prepare skeins for a wash test, link the white and colored skeins together, as in Fig. 1. Place one end of the skein on the hook, hold the other end in your left hand, and spin the weights away from you with your right hand, as illustrated in Fig. 2.

After the two skeins are twisted sufficiently, fold the end in your left hand over to the hook, as in Fig. 3; then fasten the end to the hook, straighten out the double skein, and release the spinner. The two skeins will twist upon themselves, as shown in Fig. 4. Tie the loose ends, and you are ready for your wash test.

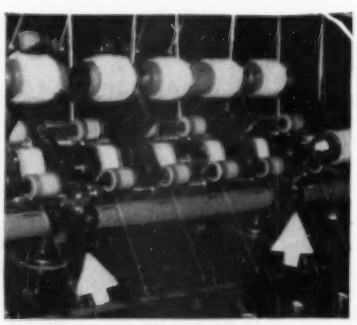
To take the twist out of ply yarn for examination and identification of singles, spin away from you for Z-twist and toward you for S-twist. (K-2934) *H. J. Haas, Martinsburg, W. Va.*



Bicycle Spokes Used To Open Balloon Springs

New balloon springs are difficult to put on tube-winding spindles. Frequently, the fixer's fingers are injured by the stiff springs.

Our fixers took two pieces of bicycle spokes and bent a small hook in one end of each. These hooks are used to expand the spring when it is put on or taken off the spindle. (K-2792) *V. V. Rajwade, India*



How To Eliminate Bottom-Roll Oiling

Recently, our mill put CleanAlign drafting in the spinning room. The new drafting system reduced cleaning and oiling time greatly, for the top rolls no longer have to be oiled. However, the bottom rolls still required oiling once a week.

We drilled a small hole in the steel-roll stand (arrow) and inserted a grease fitting. Now, instead of oiling the bottom rolls, we give them a shot of grease every three weeks. Not only have we cut our lubrication time by two-thirds, but we also produce cleaner yarn. (K-2776) *Beaumont Div., Spartan Mills, Spartanburg, S. C.*

Pneumatic Timer Saves Cloth

Tenter-frame-batcher drives operated by a separate motor are generally hooked up electrically so that they start and stop with the tenter. One push button actuates both the tenter and batcher motors.

A disadvantage of this type of circuit is that the tenter coasts for several yards after the power is cut off, while the batcher stops almost immediately. This action lets cloth accumulate on the floor between batcher and tenter.

To get around this trouble, we installed a pneumatic timer in the 550-v. frame-motor circuit. The coil on the timer is energized by the 550-v. line to the motor; and when the motor circuit is closed, the timer closes the 230-v. circuit to the batcher. Then when the 550-v. tenter-motor circuit is broken by pushing the stop button, the time-delay effect of the pneumatic timer comes into play and keeps the batcher operating long enough to pick up all the fabric delivered by the coasting tenter. The switch can be adjusted to suit the time delay necessary for each machine. (K-2907) *Wallace Graichen, Jr., Greenville, R. I.*

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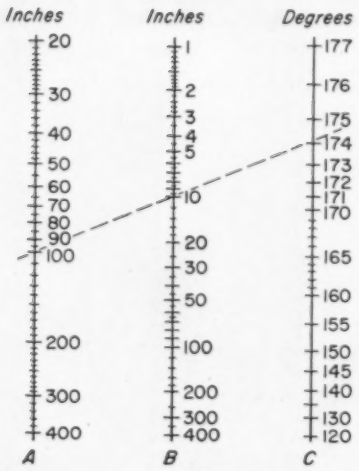


Find Arc of Contact For Chains and Belts

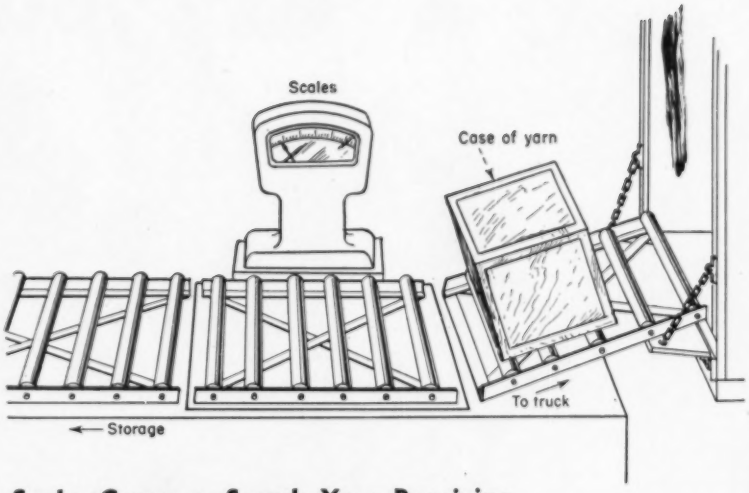
Here's a simple nomograph for determining the arc of contact for chains, V-belts, and flat belts on small pulleys.

To use the chart, run a straight line from Column A, the distance between the shaft centers in inches, through Column B, the difference between the large- and small-pulley diameters. Project this line to Column C, and the intersection will indicate the arc of contact.

For example, if the distance between shaft centers is 100 ins. and the difference between the large- and small-pulley diameters is 10 ins., the line goes through 100 on Column A, through 10 on Column B, and intersects with 174 on Column C. The arc of contact on the small pulley is 174°.

Use the outside diameters for flat-belt drives and the pitch diameters for V-belts and chain drives. (K-2752)

W. F. Schaphorst, Newark, N. J.

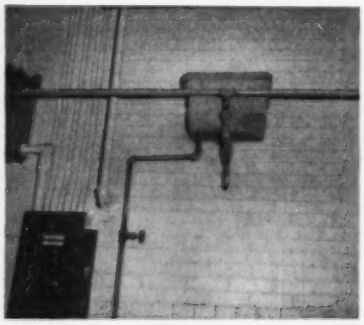


Scales-Conveyor Speeds Yarn Receiving

A simple combination of three conveyor sections with a scale has speeded up yarn receiving and made the weighings more accurate in our plant. The first conveyor section connects the truck with the scale platform, the second covers the scale platform, and the third runs from the scale to the storage room.

The yarn coming from the truck rolls down the first section. When the case comes to the second section, it stops because the scale platform is level and the last roller is braked slightly.

After the case is weighed, it is pushed along the third section to the storage room. (K-2904)



Bathroom Fixture Used In Humidifying System

Several years ago when new equipment was hard to get, we needed a new humidifying system in our opening room. We managed to get the heads and pipes, but were held up for lack of the reservoir tanks.

The problem was solved by utilizing some old flush-tanks from village houses that were being remodeled. These tanks serve so well that we see no reason to replace them. (K-2794)

Ready-Built Chains Cut Loom Downtime

Until recently, we lost a lot of weave-room production when new warps were tied in the looms because our loomfixers had to wait for dobby pattern chains to be built. When a warp was cut out, the fixers had to check the loom and make necessary repairs, such as overhauling the let-off, center stop motion, etc. They also had to wait for the chain man to build the pattern chain.

Under our new system, our loomfixers check the looms and make the necessary repairs as soon as the old warp is cut out. Usually the work is done before the warp hanger gets to the looms.

We also have the chain builder build the new pattern chain before the old warp runs out. We tie the new chain to the truck containing the newly drawn warp. And the warp hanger places the new chain on the loom when he ties in the new warp.

Consequently, we save a lot of loom downtime and increase production. (K-2876)

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AACHEN

FRANZ MÜLLER,
M.-GLADBACH

RAMISCH,
KREFELD

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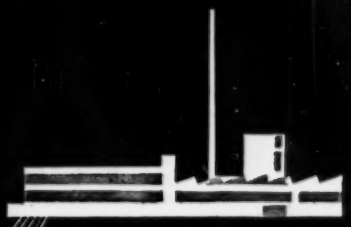
DÜLKEN



10 MANUFACTURERS
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are helping you to install complete plants for the Textile Industry

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COMBINE OF TEXTILE MACHINERY MANUFACTURERS
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German Industries Fair 1956 Hanover from 29th April to 8th May Hall 7, COMBITEX-Stand.

The Year Advertising Helped

IN 1954 we had a business recession in the United States. Sales fell about 4% during the year. If management had followed the historic pattern of business ups and downs, advertising volume would have fallen much further.

But in 1954 the volume of advertising did not fall. It increased over 5%. Every effort was made to stimulate sales when sales were needed to sustain prosperity.

This was something entirely new under the sun. It had a powerful influence in making the recession of 1953-54 one of the mildest on record. It helped greatly to speed business on to the record-breaking levels it has attained today.

There are several reasons why America's business management attacked this decline in sales with more advertising. One of them grew out of the greatly strengthened position of the American consuming market. Consumers' income after taxes has been rising an average of over $10 billion a year since 1946, and this rising income is more widely distributed than ever before. Furthermore, consumers have piled up reserves of about $215 billion in cash or its equivalent. These reserves offer a new and powerful inducement to increased selling and advertising effort even in the face of a possible decline in consumer income.

Taking the Longer View

However, the principal reason why a sales decline was attacked with increased advertising is management's new-found conviction that good advertising is essentially an investment in the development of a market. Successful development requires sustained investment. The inclination of business management to take this longer view, is, of course, motivated by the fact that the American market, with over 3 million consumers being added annually, is growing at a prodigious rate.

Ten years ago only a handful of companies had plans for investment in new producing facilities extending beyond the current year. Today almost all leading companies have investment programs running some years ahead. And keeping pace with these long-range business investment plans has been the development of sales and advertising programs to

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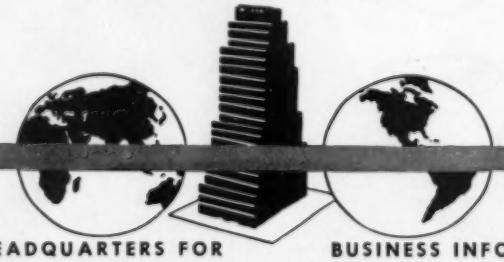

HEADQUARTERS FOR BUSINESS INFORMATION

Kill a Business Recession

reach tomorrow's greatly expanded markets.

This crucial role of advertising in providing driving power for our economy is gaining greater recognition every day. In his recent book, "People of Plenty," Professor David M. Potter of Yale University remarked: "Advertising is not badly needed in an economy of scarcity, because total demand is usually equal to or in excess of total supply, and every producer can normally sell as much as he produces. It is when potential supply outstrips demand—that is, when abundance prevails—that advertising begins to fulfill a really essential economic function."

Advertising's Key Role

Today abundance so completely prevails in the United States that it has been conservatively estimated that as much as a third of everything offered for sale falls in the realm of "optional consumption." That is, consumers can "take it or leave it" without any immediate personal inconvenience. But if they decide to "leave it," a terrific economic depression will not be far behind. In such circumstances, advertising—in which, in all of its forms, we are now investing about $9.2 billion annually—clearly is of crucial importance to our continued prosperity.

In performing its key role in past years, American advertising never realized its full potential. It successfully promoted sales. But it never was called upon to promote an overall economic stability as a direct outgrowth of increased sales.

By successfully promoting both sales and economic stability, as it did in 1954, advertising surely has added new strength to the American economy. It has also added a great new and constructive dimension to advertising itself. This accomplishment gave great significance to the celebration of the first National Advertising Week in February, 1956.

One of the surest means of expanding your sales volume in today's $150 billion *industrial* market is through dominant advertising in the publications directly serving your major customers and prospects.

McGraw-Hill's business and technical publications can give you quick access to the men who initiate, specify and approve the purchases of industrial products and services. Because all are leaders in their respective fields, you are assured a maximum return on your investment when you specify a McGraw-Hill publication to carry your advertising to your most important markets.

You get

Totally NEW FABRIC EFFECTS

. . . plus Shrinkproofing

with the unique

RIGGS & LOMBARD COMPACTING MACHINE

Now you can command an extraordinary range of special effects — through new compacting methods which enhance the basic structure of goods in unprecedented fashion and *at the same time* shrinkproofs to commercial standards or better.

The R & L compacting machine, particularly designed to practice the new methods, excitingly transforms woven and non-woven fabrics and yarns of many types by mechanical methods — no chemicals! Nubby fabrics look nubbier, patterned weaves are accentuated with depth dimension added . . . and, after these mere beginnings, possibilities for further developments are practically unlimited. Yarns come up much loftier, for use in new and superior yarn-dyed fabrics.

This compacting machine handles a wide range of weights and types from very light to heavy fabrics such as carpeting, and a variety of yarn counts consisting of any fiber or blend. Reasonable in cost, and needing minimum floor space, it can be synchronized for in-line production at relatively high speeds. Replaces sponging process before tailoring on wool, worsted, blended fabrics — also achieves fine felting effects on worsteds and synthetic fabrics.

Riggs & Lombard collaborated in development of this machine for practicing the new compacting methods on woven and non-woven fabrics and yarns of many types. Now we are sole manufacturers and distributors of this machine in these fields, under licenses from the originators, Fabric Research Laboratories, Inc. Write for complete data. Find out how we helped engineer this new machine — and can engineer an installation that will assure *you* of immediately profitable new fabric effects.

RIGGS & LOMBARD, INC.

Foot of Suffolk Street, Lowell, Mass.

Agents: Paul A. Merriam Company, P. O. Box 86, Providence, R. I., Albert R. Breen, 80 E. Jackson Blvd., Chicago 4, Ill., Larry T. Nelson, 2824 S. W. Montgomery Drive, Portland, Ore., F. W. Warrington Co., 611 Johnston Bldg., Charlotte, N. C., A. Harold Zayotti, Jr., P. O. Box 125, Riverton, N. J., H. E. Mott Co., Limited, Brantford, Ontario, Canada.

Samples For Free Testing

We can arrange for test run on yarns or fabrics to show shrink-proofing and extraordinary new effects — or to have a representative call to show profit potential in your operation. Just write or phone — no obligation.

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EQUIPMENT AND SUPPLY NEWS:

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DOMESTIC RATES
FOREIGN ON REQUEST

Product or Service .....

No. Employees in your plant.....

OLD ADDRESS
No. & Street.....
City ..... State .....

PLEASE TYPEWRITE OR PRINT PLAINLY

Name ..... Title.....
Mill .....
Street .....
City ..... State.....

TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. April, 1956

Outstanding NEW LITERATURE *Free for the Asking*

NO REPEATS . . . Listed here for April are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY

Direct-drive spindle—For cotton spinning. Worm-and-gear drive, enclosed lubrication. Hispano-Suiza S.A. (F-1)

High-draft spinning system—Features 2½-in. rings and 10-in. lifts with anti-balloon rings. O. M. Spinning Machine Mfg. Co. Ltd. (F-2)

Pneumatic clearer system—For spinning frames. Built for central collection or for individual frames. Edward S. Rudnick. (F-3)

AUXILIARY EQUIPMENT

Electric motors—For general use; explosionproof models, dripproof models, all redesigned. Bulletin 1700. Louis Allis Co. (F-4)

Chemical pumps—Handle all chemicals except molten alkali metals or hot fluorine. Capacities from 300 to 900 gals. per hr. O. K. Machine & Tool Co., Inc. (F-5)

Chemical mixer—For dyes and chemicals. Mixes and pumps out the dissolved material. 50-gal. tank. Form 30-30b-00. Pako Corp. (F-6)

Hydraulic drives—Their performance characteristics measured in tests described in P.R. 63. Oilgear Co. (F-7)

Magnetic drive—For constant-torque loads, fans, pumps. 15 to 95 hp. Accurately controlled variable speed. Bulletin 4400-PRD-229. Electric Machinery Mfg. Co. (F-8)

Knit-goods let-off—For flat knitting machines. Provides automatic, closely controlled yarn delivery to within ¼%. Geo. Clentimack Co., Inc. (F-9)

Moisture controller—For recording and/or controlling moisture in warps, fabric, paper. Bulletin 9311. Minneapolis-Honeywell Regulator Co. (F-10)

Ultraviolet lamps—For detecting chemical differences, oil stains, fiber mixtures in textiles. Black Light Eastern Corp. (F-11)

SUPPLIES & CHEMICALS

High-pressure greases—For extreme conditions of operation where bearing pressure is high, temperatures low. Bulletin 105. Alpha Molycote Corp. (F-12)

Picker-rod lubricant—Supplied in a collapsible tube special applicator. Garland Mfg. Co. (F-13)

Thickeners—For print pastes, sizing formulas. Natural and methylated gums compatible with other water-soluble textile-printing materials. Burtonite Co. (F-14)

Rubber-covered rolls—For all textile purposes. Supplied in a variety of covers to meet requirements of processing. Tyer Rubber Co. (F-15)

Emulsifiers—For cleaning compounds. Reduce surface tension, increase effectiveness of alkalis in industrial cleaning. Hercules Powder Co. (F-16)

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New York 36, N. Y.

McGraw-Hill Publishing Co., Inc.

NEW LITERATURE Continued

Colloidal silica—For antislip finishes on fabrics, yarn treatment, on cotton, rayon, wool. Grasselli Chemicals Dept., E. I. du Pont de Nemours & Co., Inc. (F-17)

ENGINEERING & MAINTENANCE

Pipe hangers—For pipe, conduit, in plants. Vibration-absorbing, heavy-duty types. Cat. VH-55. T. R. Finn & Co., Inc. (F-18)

Water-tube boilers—Packaged units delivered equipped. Rated at 8,000 to 50,000 lbs. per hr. of steam. Superior Combustion Industries, Inc. (F-19)

Steel tubing—For boilers, heat exchangers, other uses. Carbon, stainless, alloy types. Bulletin TB408. Babcock & Wilcox Co., Tubular Products Div. (F-20)

Boiler accessories—Water gauges, blow-off valves for high-pressure boilers. Bulletins WG-812 and B-434. Yarnall-Waring Co. (F-21)

Centrifugal fans—Newly designed for superior performance. High efficiency, low noise level. Bulletin A-102 Type A. Chicago Blower Corp. (F-22)

Surface-speed indicator—For checking surface speed of drums or moving webs. Bulletin 791. Herman H. Sticht Co., Inc. (F-23)

Mechanical separators—For over 240 different materials. Textile applications include removing lint from waste water. Cat. 112-102. Southwestern Eng. Co. (F-24)

Gate valves—Designed for corrosive-liquid service, in sizes from ½ in. to 8 ins. Cir. 592. Lunkenheimer Co. (F-25)

Electric cartridge heaters—For local heating. Rated at 30 to 2,000 w. in sizes from ⅜ in. to 1¼ ins. dia. Bulletin 850. E. L. Wiegand Co. (F-26)

Water heaters—Industrial types designed to accommodate peak loads with minimum storage requirements. Bulletin 923. Fred H. Schaub Eng. Co. (F-27)

Roof ventilators—Propellor-type fans, housings, for vertical or horizontal mountings. Bulletin A-112. Hartzell Propellor Fan Co. (F-28)

Steam trap—For 10 to 600 lbs. per sq. in. Only one moving part, thermodynamic type. Supplement 255-44. Sarco Co., Inc. (F-29)

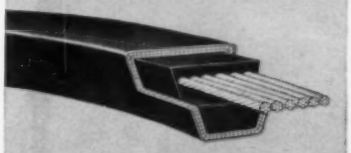
Graphite heat exchanger—For corrosive liquids. High turbulence improves efficiency. Bulletin 6550. The Carbone Corp. (F-30)

Speed changer—For 9 to 1 variations in speed. Input ratings are ½ to 10 hp. Bulletin K-200. Cleveland Worm & Gear Co. (F-31)

your Wood's distributor has the right v-belt for your drive

for single belt drives

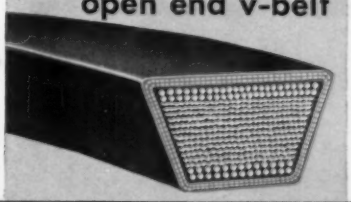
fhp v-belt



A complete line of endless fractional HP-V-Belts, for light industrial and domestic uses. Available from stock in standard sections and lengths.

for lineshaft "dismantle to install" drives

open end v-belt



Can be used in place of endless V's in emergency. Square woven body anchors fasteners—no pull out. Same HP as standard belts. Available in A, B, C, and D cross sections in rolls, half rolls or cut lengths.

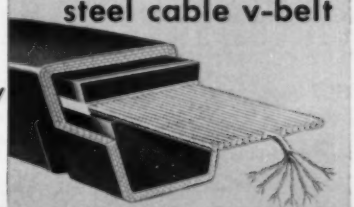
for short center high-speed drives

super v-belt

Rated 40% above standard—fewer belts mean less maintenance. Notches dissipate heat, increase flexibility. All belts oil resisting and available for static conducting.

for medium center heavy-duty minimum take-up drives

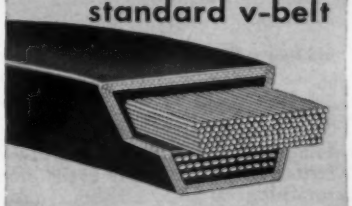
steel cable v-belt



Continuous steel cables provide super strength, practically zero stretch. Notches dissipate heat, increase flexibility. Highest HP ratings. Available in A, B, C, and D cross sections.

for longer normal speed drives

standard v-belt



Multiple-ply, continuous rayon cords withstand shock loads. Straight sidewalls assure proper fit, even wear, best-grip. Available for heat and oil resisting (ORS) static conducting (SC).

No one type of V-belt is the "cure-all" for every drive requirement and operating conditions; therefore we are always in a position to recommend and supply the V-Belt best suited to your particular needs. Send for literature and prices, or consult your Wood's Industrial Distributor.

T. B. WOOD'S SONS CO.

CHAMBERSBURG, PA.

CAMBRIDGE, MASS. • NEWARK, N.J. • DALLAS, TEXAS • CLEVELAND, O.

6 TIMES A YEAR is only buffing needed for this Tennantized weave room floor.

3 REASONS WHY YOU CAN NOW

Save 30% to 60% in Floor Maintenance Costs

Important NEW improvements in the TENNANT System now make it possible—a saving of 30% to 60% in floor care costs annually, compared to 5 years ago. Here's why, as reported by many mills:

1. You use 50% less manhours today in cleaning a TENNANT-treated floor because its dirt-resistance has been almost tripled. You buff only 1/5 to 1/10 as often . . . need only a dry mop for daily cleaning.

2. Floor seals last 4 times longer today because they are more wear-resistant, stand up better under oil, grit and dirt. Bright, lustrous finish is easily renewed without need for sanding.

3. You save time in problem areas, like weave rooms, with new TENNANT materials that resist humidity, starch, discoloration, etc. Saves manhours (see photo above). *Write today for details; ask for estimate of savings possible in your mill.*

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ESTABLISHED 1870

G. H. TENNANT CO.
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Minneapolis 11, Minn.

FLOOR MAINTENANCE SYSTEM

NEW LITERATURE Continued

Small switches—Limit switches, in snap-action, mercury-actuated models for many purposes. Preliminary data sheet 104. Micro Switch (F-32)

Stationary tachometers—For measuring rpm., yds. per min., other uses. Dial sizes to 10 ins. Boulin Instrument Corp. (F-33)

GENERAL

Density-measuring instruments — Report No. 7 describes three types of instruments for measuring rubber-roll density. Rodney Hunt Machine Co. (F-34)

Masonry preservation—50 photos and diagrams. Repair methods, proper construction outlined in 10 sections. Tremco Mfg. Co. (F-35)

Floor care—For all types of institutional and industrial floors. Cleaning and maintenance methods outlined. S. C. Johnson & Son, Inc. (F-36)

Duplicate-card detector—A punched-card machine for inventory, payrolls, other applications. Folder TM-937. Remington Rand Corp. (F-37)

Stretch-hosiery seaming — Tips on seaming stretch hose; auxiliary equipment described. Union Special Machine Co. (F-38)

Display boards—Magnetic steel boards for displaying charts, employee records, samples. Form 3547. Methods Research Corp. (F-39)

Materials handling—Overhead tramrail equipment of all types described in Booklet 2008L from Cleveland Tramrail Div., Cleveland Crane & Eng. Co. (F-40)

Shop and office equipment—Steel cabinets, files, drawers, lockers, miscellaneous items. Precision Equipment Co. (F-41)

Straddle truck—Electric trucks for heavy-duty, narrow-aisle operation; 4,000-lb. capacity. Bulletin 831. Raymond Corp. (F-42)

Engineering—How to select an engineering firm for specific purposes. Brochure from Teller Co. (F-43)

Industrial trucks—Many styles and types for all industries listed and described in Cat. 56G. Nutting Truck & Caster Co. (F-44)

Steel-mesh containers—For yarn, fabric, many other products. Built in various sizes. Pittsburgh Steel Products Co. (F-45)

Fire-protection systems—Dry-chemical systems for plants, warehouses de-

From Sliver to Yarn in One Operation... with the NEW

WHITIN MONARCH* SPINNING FRAME

Produces large yarn packages and completely eliminates roving

Actual mill installation of Whitin Monarch Spinning Frames

COARSE YARN PRODUCTION

The Whitin Monarch Spinning frame is a new type machine for producing very large packages of knotless coarse yarns, from .5's — 8's (cotton count), directly from sliver. The frame features a massive chassis, the famous Whitin two-apron roving drafting arrangement with top arm suspension and weighting, 7″ gauge, up to 5½″ rings, 11″traverse. Either floor or ceiling creels can be used.

It is ideally suited to highly economical production of quality tufted carpet and other coarse yarns from wools, synthetics and blends with fiber lengths from 3″ to 9″.

- **Yarn on bobbin — up to 3.5+ lbs.**
- **Draft range 4 — 50**
- **Accommodates sliver up to 100+gr./yd.**
- **Spindle speeds up to 5000+ r.p.m.**
- **Spinning type cradles**
- **Quik-Set Ratching for instantaneous change of roll setting**
- **Pulleys for four spindle drive**

* TRADE MARK

WHITIN MACHINE WORKS FOR 125 YEARS SERVICE TO THE TEXTILE INDUSTRY 1831 - 1956

Whitin

MACHINE WORKS

WHITINSVILLE • MASS.

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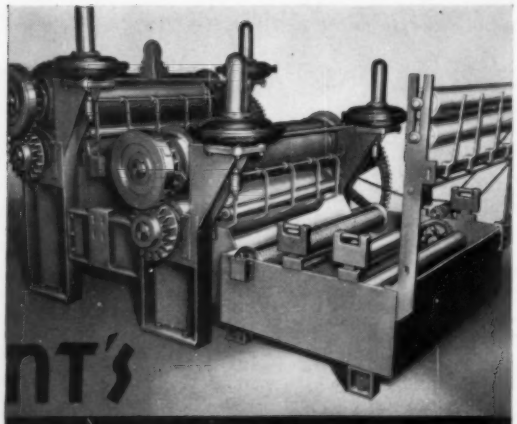
No More Broken Ends

SARGENT'S NEW DESIGN



BACKWASHER and BACKWASH DRYER

ANY FIBRE - ANY BLEND

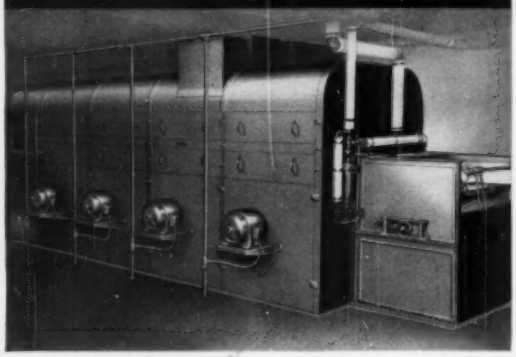
For washing and drying sliver as it comes to the cards

•

For final washing of top before finisher gilling

•

For rinsing and setting of dyed top in ball form



Up to 48 three-ounce ends run through simultaneously — better than 700 lbs. hourly production of card sliver . . . SARGENT-designed so ends are threaded through more easily and quickly than ever before.

Switches on backwasher drives, dryer conveyor, and on gill box are synchronized to start and stop in unison, eliminating danger of broken ends.

Added ease of inspection of ends being dried . . . completely automatic, continuous operation throughout . . . remarkably simple to install, wonderfully easy to operate.

Want more information? Just write your nearest representative or write us direct. And ask for Bulletin No. 203

C. G. SARGENT'S SONS CORPORATION

Graniteville, SINCE 1852 Massachusetts

PHILADELPHIA 19 — F. E. Wasson, 519 Murdock Road
CINCINNATI 15 — A. L. Merrifield, 730 Brooks Avenue
CHARLOTTE, N.C. — W. S. Anderson, Carolina Specialty Co.
ATLANTA, GA. — J. R. Angel, Mortgage Guarantee Building
TORONTO, CAN. — Hugh Williams, 47 Colborne Street

NEW LITERATURE Continued

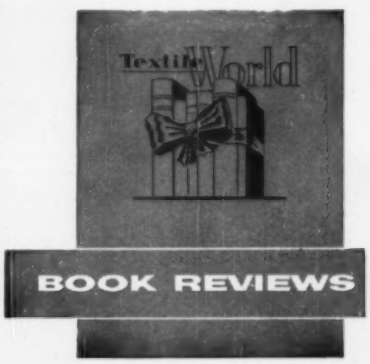
scribed in bulletin from Ansul Chemical Co., Fire Equipment Div. (F-46)

Water treatment—An analysis of high-rate and conventional water-treatment plants. Reprint T-141. Graver Water Conditioning Co. (F-47)

Loom rebuilding—A description of methods and materials used to rebuild looms at plant or factory. Yeomans Textile Machinery Co. (F-48)

Plastic packaging—How to use plastics in modern packaging. Many types of plastics described in booklet J-658. Bakelite Co. (F-49)

Stacking machine—Employs vacuum principle to load and position bags, cartons, etc. on pallets. Bulletin 198. Alvey Conveyor Mfg. Co. (F-50)



PRACTICAL TEXTILE CHEMISTRY, by J. W. Bell, Ph. D.; Chemical Publishing Co., Inc., 212 Fifth Ave., New York 10, N. Y.; 249 pages, $4.75.

This book emphasizes wool chemistry in the first section and goes into the processing and materials used in processing of wool in the following sections. The identification of fabric faults is discussed in an important chapter. Practical tests for all commercial fibers and blends of these fibers occupy a special section.

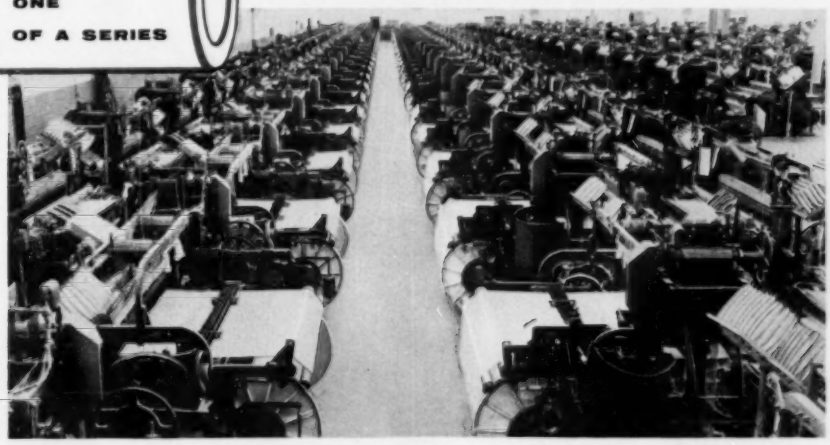
THE ACCIDENT PREVENTION MANUAL, by National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.; 1,341 pages, $13.50.

A thoroughly revised encyclopedia of safety, this volume contains 43 sections covering all aspects of accident prevention, how to set up plant safety committees, develop favorable publicity, set up record systems, and information on insurance costs. Technical information is given concerning pressure vessels, materials-handling equip-

TESTED WAYS TO ASSURE MORE PROFITABLE TEXTILE PRODUCTION

ONE OF A SERIES

HYATT ROLLER BEARINGS SAVE UP TO 98% ON LUBRICATION



Installation of Crompton and Knowles W-3A Looms at Robbins Mills, Raeford, N. C. Hyatt Roller Bearings are applied in principal loom bearing positions.

Remarkable as it may seem, tests have shown conclusively that HYATT Roller Bearings require only *one-fiftieth* as much lubrication as many plain bearings in textile machinery—*a 98% reduction in lubricant consumption*, with corresponding savings of time and labor!

However, if only a few of the bearings in a machine are roller bearings, it may not be possible to reduce the number of oilers in the mill. It is obviously advantageous to equip all or nearly all bearing positions with HYATTS to assure savings in labor as well as maximum savings in lubricant and power.

INDIRECT ADVANTAGES

There are also important *indirect benefits* which may outweigh the direct savings. For example: (1) Lack of lubrication on plain bearings can cause fires which destroy costly warps, with consequent loss of production. (2) Plain bearings starved for lubricant wear out rapidly. (3) Seized bearings cause loss of production and often the replacement of a costly shaft. In short, HYATT savings in lubrication *also mean savings in maintenance.*

Be sure to specify roller bearings by HYATT—America's *first* and *foremost* roller bearing builder—when you modernize or replace *any* of your machines. For further details on the profitable application of HYATTS to textile machinery, request Bulletin T-54 from Hyatt Bearings Division of General Motors Corp., Harrison, New Jersey.

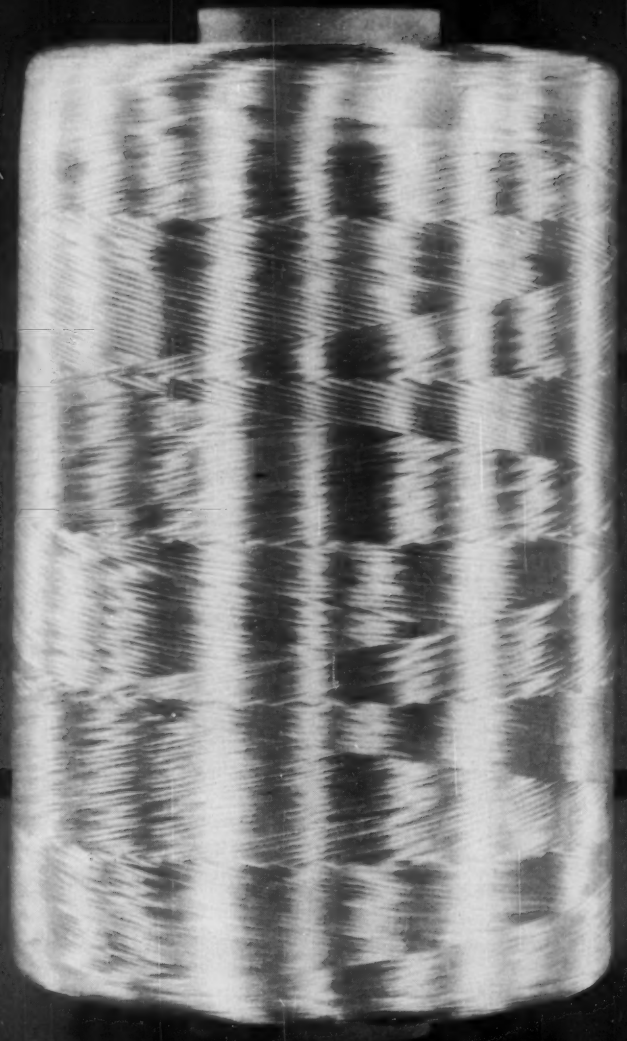
NO TEXTILE MACHINE IS BETTER THAN ITS BEARINGS!

HYATT ROLLER BEARINGS

STRAIGHT BARREL TAPER

 For more information, write direct or use Reader-Service post card.

NOW, brought to you



*caprolan**

NYLON HEAVY YARNS

Allied Chemical's new Caprolan heavy yarns are of particular interest to makers of:

Heavy Duck • Industrial Slings • Fire Hose • Cords & Braids
Upholstery Fabrics • Webbings • Conveyor Belt Fabrics
Rope & Twine • Tapes & Belts • Carpets & Rugs

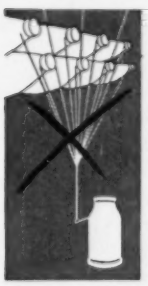
* TRADE-MARK

exclusively by Allied Chemical...Caprolan®!

Nylon Heavy Yarns

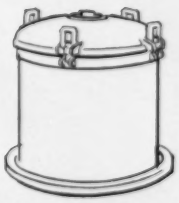
A Completely New Class of Durable Textile Yarns Available in 2,100, 2,500, 5,000 and 15,000 Denier

Mills report these advantages:



1. Cuts Plying Costs! Supplied in the total deniers you need, Caprolan nylon heavy yarns are engineered to your specifications without plies. No need to inventory costly finer deniers. Heavy yarns with nominal twist are supplied on knotless 10-pound parallel nonreturnable tubes.

2. Cuts Heat-Setting Cycles! Another money-saving advantage of these heavy yarns is that heat-setting cycles can be materially shortened because of Caprolan's workability with heat.



3. Minimizes Dyeing Problems! Heavy nylon constructions are much easier to dye when Caprolan heavy yarns are used. Allied's new fiber has a remarkable affinity for all classes of dyestuffs.

Other Heavy Yarns Can Be Engineered to Your Specifications In a Range from 2,000 to 50,000 Denier!

Now, from Allied Chemical—an important new tool for the textile industry—nylon heavy yarns engineered to your specifications! This completely new class of durable textile yarns eliminates need to ply multiple ends of finer deniers to achieve a higher total effect.

Caprolan heavy yarns are versatile, too. Whether you make duck, webbings, carpet, upholstery or any other type of heavy nylon fabric these heavy yarns will find a place in your mill. They are especially effective where toughness and high impact strength are important considerations.

These nylon heavy yarns are made exclusively by Allied Chemical. In addition to all of the known qualities of nylon, Caprolan heavy yarns offer such plus values as affinity for all classes of dyestuffs, *deep* dyeing and uniform level shades.

These new heavy yarns already are in commercial use in important mills and evaluation programs are under way in many others. If you would like more information, technical assistance, or would like to evaluate Caprolan heavy yarns in your own mill, write:

Fiber Sales and Service

NATIONAL ANILINE DIVISION

Allied Chemical & Dye Corporation

261 Madison Ave., New York 16, N. Y.

Branch Offices—Jefferson Standard Building, Greensboro, N.C., 200-204 S. Front St., Philadelphia 6, Pa., 15 Westminster St., Providence 3, R.I.

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All General Latex natural and synthetic latex compounds are blended to perfection . . . to meet your most discriminating requirements. **Write us your requirements.**

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ment, power tools, and many other subjects.

TESTED TECHNIQUES OF PERSONNEL SELECTION, by Dartnell Corp., 4660 Ravenswood Ave., Chicago 40, Ill.; 400 pages, $20.

A scientific approach to personnel selection, based on plant experiences, is set forth in this manual that covers employment procedures from initial employment requirements through final evaluation for job suitability. Complete methods of determining the applicant's physical, psychological, and mental aptitudes for a given job are outlined. How to hire, whom to hire, and how to test and train employees are given considerable attention.

TEXTILE QUALITY CONTROL PAPERS, VOL. II, by American Society for Quality Control, 50 Church St., New York 7, N. Y.; 238 pages, $2 (members) or $4 (nonmembers).

This second volume of *Textile Quality Control Papers* includes papers delivered at the annual conference of the Textile Div., American Society for Quality Control, with other independently contributed papers. The work covers most phases of quality control in the areas of fiber quality, yarn and fabric manufacturing, and finishing quality. A complete bibliography on textile quality control is included.

STANDARDS OF THE HYDRAULIC INSTITUTE, by the Hydraulic Institute, 122 E. 42nd St., New York 17, N. Y.; $4.75.

This loose-leaf compilation of data classifies and defines operating and material standards for centrifugal, rotary, and reciprocating pumps. A separate Data Section deals with pipe friction in various materials, recommended construction materials, and viscous-fluid friction tables.

THE CARPET ANNUAL, by the British-Continental Trade Press Ltd., 222 Strand, London. W. C. 2., England; 380 pages, $5.00.

A review of carpet design and the technical development of carpet manufacture are combined in this volume with a world-wide survey of the carpet industry. An Oriental-carpet survey, and a chapter on "Window and Interior Survey" complete the editorial content. The directory sections list manufacturers and distributors of carpets and rugs. Also listed are machines, accessories, and raw materials that are pertinent to the carpet industry.

The book may be obtained from J. D. Griffiths, 1502 Clegg St., Greensboro, N. C.

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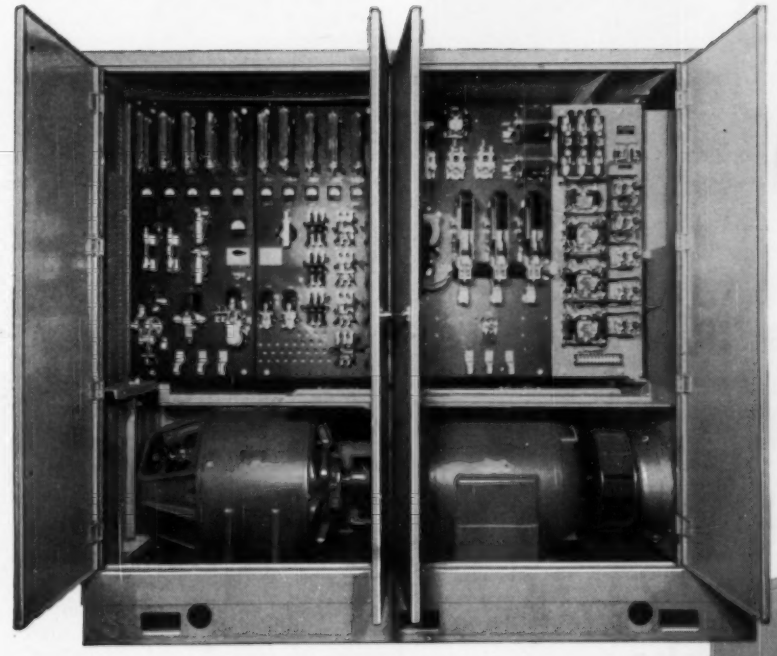
ELLIOTT C-W Adjustable Speed Drives

are your answer for...

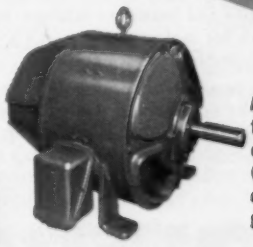
- Speed Adjustment
- Positive Stopping
- Reversing
- Dynamic Braking
- Pre-set Speed
- Multi-motor Drive
- Jogging or Creep Speeds
- Automatic Acceleration or Deceleration
- Torque Limit Protection
- Visual Speed Indication
- and many other complex operating conditions



A control cabinet houses the a-c to d-c conversion unit, plus the control required for the particular application. At left is a 100-hp package.

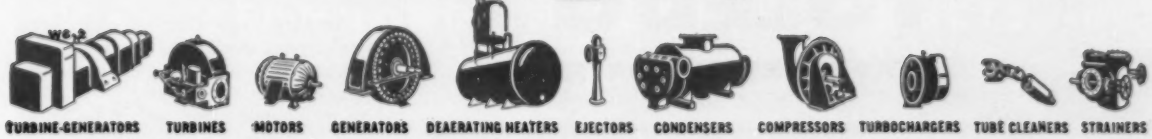
Power unit is housed in a pressurized sheet-metal cabinet with incoming air passing through filters, insuring long life and low maintenance costs. Cabinet has doors, front and rear, for easy access; doors, as well as center posts, are removable.

THESE PRE-ASSEMBLED, PRE-WIRED, easily installed power packages meet today's needs for flexible d-c motor performance from a-c power supply. They are designed for ratings up to 200 hp; speed ranges to 16:1 and up; 208, 220, 440 or 550 volts; 25, 50 or 60 cycles; 2 or 3 phase operation. Many modifications can be provided to meet special operating conditions. All components—power conversion and control—are backed by the Elliott Company's more than half-century experience in the manufacture and application of industrial drives. For complete information, write Elliott Company, Crocker-Wheeler Division, Jeannette, Pa.



A typical Elliott C-W d-c motor for use with adjustable speed drives. In addition to dripproof (shown) Elliott offers totally-enclosed, integral brakemotors and gearmotors.

ELLIOTT Company



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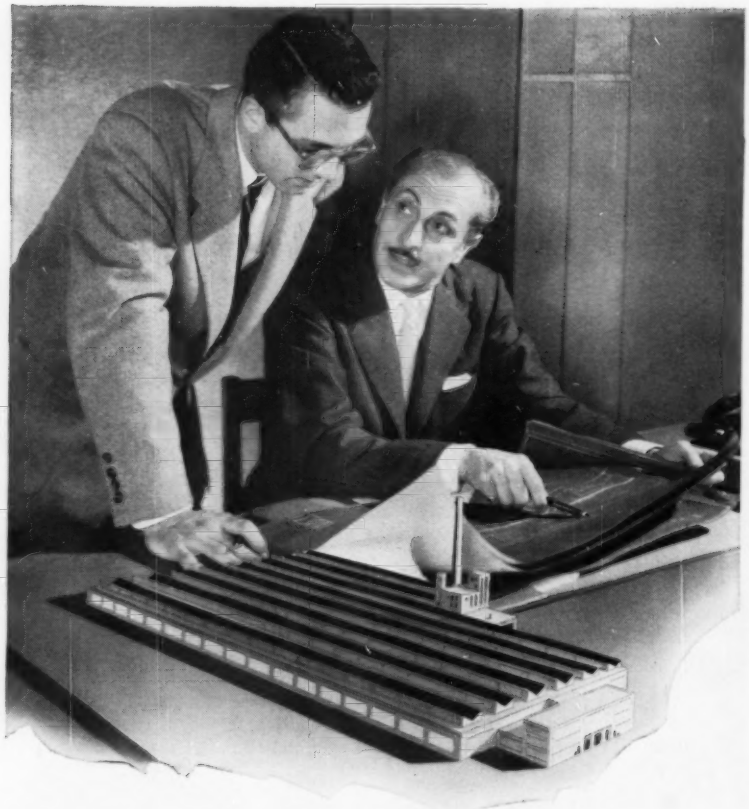
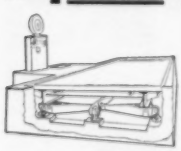


When you STUDY COSTS it pays to take a plant-wide look at WEIGHING



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OVER-UNDER SCALES

A MODERN WEIGHING SYSTEM can make a big difference in cost control and profit in your plant!

Are scales missing where needed? Are over-worked scales making bottle necks in your production? Are you losing material and time with scales misfitted to their jobs? In this day of highly specialized machines and methods, your scales should add up to a *Weighing System* . . . the right scales in the right places . . . supplying basic data for your accounting *system*. These records that originate at scales directly affect costs, inventories and customer billings. Weighing today is not a job for isolated scales—it's a vital part of your overall cost-control system.

If you would like to look further into this in your plant, why not drop us a line today? No obligation, of course. Ask for Booklet 2036. Toledo Scale Company, Toledo 1, Ohio.

SEND TODAY

TOLEDO®

HEADQUARTERS FOR SCALES

TEXTILE MARKETING

CONTINUED FROM PAGE 83

the production facilities. For all their ability, the creative geniuses cannot insure acceptance of consumers or industrial buyers unless they take into account these people's habits, likes, and dislikes.

2. Avoidance of consumer research. Industries that are several steps away from the consumer have a tendency to leave consumer research to retailers, wholesalers, and jobbers. The textile industry is a well-known example of this point of view. There is some well-informed opinion that textiles would not have run into so much trouble in late years if they had followed a more-realistic policy about consumer research.

3. Misdirected advertising. Too much production influence in the company's marketing effort usually shows up in advertising copy. Compare automobile advertising, generally a good example, with textile advertising, too often a bad example. The automobile ads help make last year's model obsolete in the consumer's eye. By contrast, instead of trying to make wardrobes seem obsolete, textile advertising usually claims longevity and durability.

4. Inadequate market development. Expenditures for developing consumer markets are too often insignificant in comparison with tremendous sums spent on research, cost production, and new plants and equipment.

Perhaps what all this adds up to is a plea for taking a fresh look at the complexities of marketing. There is an appalling tendency among executives everywhere to simplify, to reduce to rules, or, to use one of their favorite terms, to try to "engineer" a sales program. Attempting to apply to marketing what has worked in production, finance, or engineering is nearly always fatal.

Marketing Policy Needed

An open mind is essential to a good marketing program. Methods that were impractical or unheard of yesterday may be the answer today. A clear-cut marketing policy is needed and should have well-defined limits of operation and responsibility. To keep abreast of developments, the successful programs should be analyzed as well as the failures. It is just as important to know why a product sells as it is to know why it doesn't sell.

Another factor that has often been neglected or overlooked in a marketing program is consideration of the dealer. A dealer does not like to handle a line of merchandise for which he must

(*Advertisement*)

New Resin and Softener Offered to the Trade

by LEWIS C. GREENE
Sales, Greenville, S. C.

Following on the heels of STANSET D 40 and STANSET S 100, Standard is proud to announce the addition of a new, unique resin to the STANSET family and the development of STANTONE, a new and improved softener.

The new resin, STANSET Z-98, is particularly applicable to cotton fabrics and, when used with CATALYST AH, gives above average crush and physical properties. The other outstanding properties of STANSET Z-98 are:

- Low Chlorine retention over a wide range of curing conditions.
- When subjected to repeated chlorine washes or alkaline washes, no noticeable hydrolysis is observed.
- Non-yellowing with hot chlorine solutions.
- Excellent reflectance after a mild perborate wash.

STANTONE is the culmination of extensive work to develop a softener to meet a variety of finishing operations. It is a substantive softener and anti-static agent in the form of a white paste that dissolves easily in hot water to form a hazy, opalescent solution having a pH of 6.5. It is stable under alkaline, acid and neutral conditions and is unaffected by hard water.

Because of its amphoteric character, STANTONE is compatible with most textile auxiliaries, such as finishes, dye assistants, etc. It has a minimum effect on light fastness and shade of dyed fabrics and does not discolor white fabrics.

STANTONE has proved very effective as a softener and anti-static agent on cotton, wool, rayon, acetate and nylon. Application can be made in the rinse after dyeing or by padding in the finishing operation. It can be used as a softener in resin baths or as a top softener after resin treatments.

Standardgrams

Standard Offers Technical Know-How to Complement Its Line of Products

The extensive and continuing development work conducted in our laboratories has over the past years resulted in an ever expanding line of improved products for the textile industry. The new resin and new softener discussed in an adjoining column by our Southern Representative, Mr. Lewis C. Greene, are cases in point.

In addition to the development of new textile chemicals, however, much of our research is devoted to the improvement of older, proved and accepted products so as to give Standard a full line of superior dyeing and finishing materials.

For cotton and synthetic dyeing and finishing of piece goods, we have a product for every operation:— boil-off and bleach assistants, mercerizing penetrants, dispersants, level dyeing aids, detergents and strippers. For the finishing department, we have sulfonated oils, non-ionic softeners, wetting and rewetting agents and sanforizing oils. We feel our resins are of the highest quality for cotton and synthetic fabrics.

Special formula products for your individual needs can be manufactured by chemists and production men who know and understand the technical applications in your mills. We offer technical service by men who, through years of valuable on-the-job experience, have the know-how to solve your mill problems.

We would more than welcome a chance to prove these claims about our products and staff. Why don't you give us a call?

Bluing Migration Prevented

In starching an occasional lot into a box, many finishers often are troubled by migration of bluing and salts left in the goods from the bleach. STANTEX® 101 is a softener that will not only perform its primary function but will also prevent this migration.

STANRAY 217 is recognized as a superior all-round softener for napping, starching and filling. It is preferred by many finishers because it does not yellow and has no odor.

For that *softest feel* on your high grade shirtings, STANDAPOL® 16 is highly recommended. It has all the *non* qualities that are a must, together with good sewing and ironing.

Tips for the Dyer

If you are having neppy dyeings on your work clothing, RETARDINE® will eliminate the condition and give you the smooth look you have been seeking. Another sure bet for dispersing your dyestuffs and getting the penetration is STANTEX PENETRATOR 111. When it comes to dissolving and dispersing naphthol color salts and bases, STANTEX NR-2 is highly recommended . . . it also makes them penetrate into the fibre when coupling. For tub and beck dyeing, we highly recommend PYROTEX 121.

STANDARD CHEMICAL PRODUCTS, Inc.
HOBOKEN, NEW JERSEY · CHARLOTTE, NORTH CAROLINA
CHATTANOOGA, TENN. PATERSON, N. J. SWANSEA, MASS. SALISBURY, N. C.
SUNBURY, PA. SACRAMENTO, CALIF. GREENSBORO, N. C. GREENVILLE, S. C.

for trouble-free knitting
and good color matches . . .

GLOBE-DYED
Cotton Yarns

Cotton Yarns dyed by GLOBE are your assurance of bright, clear colors, good matches, and superior knitting qualities.

Globe Dye Works Co.
1865 1956

Globe does package dyeing on tubes, skein and warp dyeing and bleaching, warp mercerizing and sizing.

Yarns processed include cotton, rayon, worsted, nylon, linen, blend and novelty yarns. Also Acrilan — Dacron — Orlon.

4500 WORTH STREET, PHILADELPHIA 24, PA.

For more information, write direct or use Reader-Service post card.

do all the promoting. Nor does he like a product that does not give customer satisfaction. The degree of a dealer's success is in direct proportion to the popularity of the products he sells.

To summarize the marketing situation in general, and that of textiles in particular, it is important that first things come first. The primary object of marketing is to provide an outlet for the products of industry. Advertising should be aimed at creating a desire among the consumers for these products.

To create such a desire it is necessary to map a marketing program with the likes and dislikes of the buyer as a guide. However, it must be remembered that the buying public is often illogical and irrational in the purchase of both durable and nondurable goods. By its uncertain, ever-changing nature, marketing presents a constant challenge to the ingenuity of both the production and the sales departments of every firm.

UNIFIL LOOM WINDER

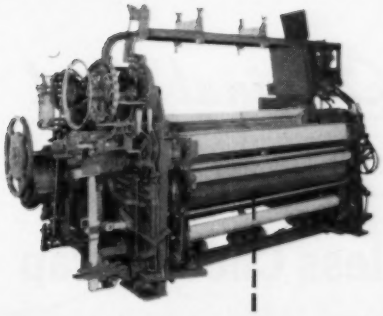
CONTINUED FROM PAGE 87

be transferred, the transferring action takes place just as in conventional Draper looms. The end of the yarn of the bobbin in the transfer position in the full-bobbin magazine extends through the yarn clamp, which is in its open position.

When the transferrer fork places the full bobbin in the shuttle, the yarn clamp is closed and holds the end during the first pick. As the lay moves toward front center, the clamp is recocked and the end on the drum is transferred into a secondary clamp, which positions the end slightly lower than the bottom of the tension drum. Since the drum continues to rotate, the end works off the bottom but is still retained by the secondary clamp.

In the meantime, the end from the yarn clamp, together with the end held by the Stafford thread cutter, are cut by the temple cutter and are dropped into the path of the suction clearer. These ends are held in their respective positions until the next loom transfer. And at this time, they are released and deposited in the waste container through the air-clearer system.

The suction clearer is powered from a cylinder pump mounted inside the loomside on the motor end of the loom. A piston driven by the loom lay forms intermittent air pressure that, through an aspirator arrangement, creates a vacuum to clear the end. As a result, the lay end and surrounding area are completely free from loose yarn.



WON'T MARK FABRICS

This smooth roll covering delivers high take-up tension, too

To get firm, even take-up tension without the risk of marking fabrics, use the roll covering that combines smoothness and high friction—Armstrong NO-732.

NO-732 is made of a special synthetic rubber compound that offers unusual holding power . . . up to twice what you'd normally expect from a rubber material. At the same time, Armstrong NO-732 has a finely textured surface that won't mark even the most delicate cloth.

You can test NO-732 right in your own office. Rub a sample on your shirt sleeve or the cloth you weave. Notice how little pressure it takes to make NO-732 grip the fabric. Feel its smoothness. Then try NO-732 on your looms. Your Armstrong man will help set up a test. Ask him to arrange for it next time he calls.

For more information about NO-732 and other Armstrong Loom Supplies, write for a copy of our new loom supplies folder. Address Armstrong Cork Company, Industrial Division, 6904 Dauphin St., Lancaster, Pennsylvania. Armstrong Loom Supplies and other textile products are available for export.

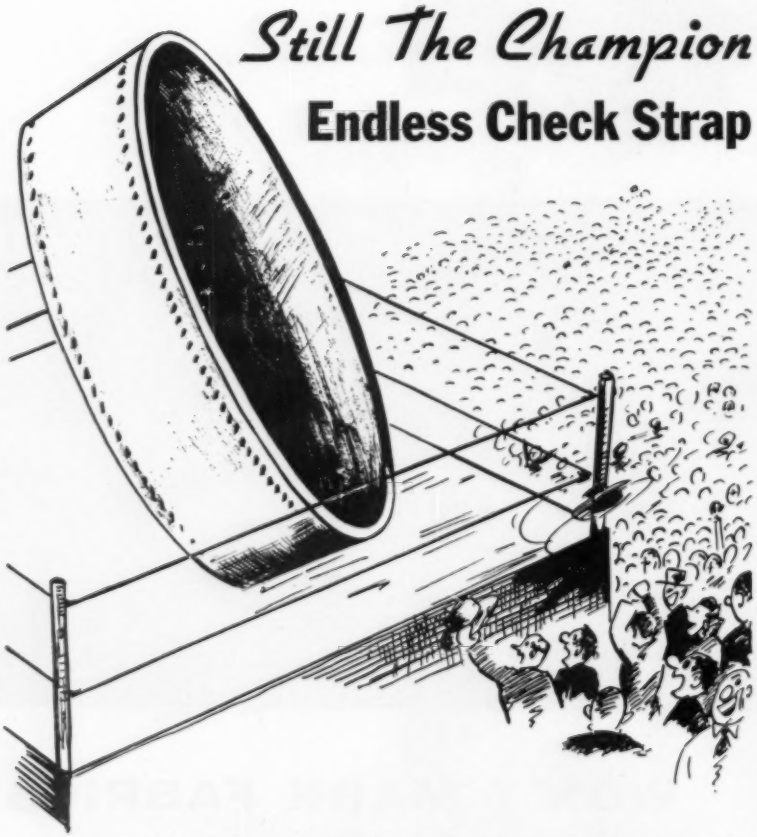
Armstrong LOOM SUPPLIES

. . . used wherever performance counts

LOOM CLUTCH DISCS AND INSERTS . TAKE-UP ROLL COVERINGS . LOOM BRAKE AND LET-OFF STRIPS . TEMPLE ROLL COVERINGS

The Original And Still The Champion

Endless Check Strap



Dodenhoff introduced the molded endless check strap 14 years ago — and has been the leader in the field ever since.

The Champion Endless Check Strap gives longer and better service because it is molded to hit the picker stick squarely each time and is so built that it retains its shape throughout its long life. Average service is 15 months — 2 shifts — over 65 million picks per strap.

Champion Straps are made of flawless center-stock 2-ply English hair on steerhide. This is thoroughly prestretched. Three-inch laps are firmly bonded by glue and pressure, tops and bottoms are Nylon stitched, and the check strap is then put through several forming operations to permanently set the striking angle.

We are confident that no other endless check strap will out-perform the Champion . . . the original. Order a supply today and make your own comparisons.

W. D. DODENHOFF CO.
INCORPORATED
GREENVILLE, SOUTH CAROLINA

FLOCK AND LACQUER

CONTINUED FROM PAGE 90

length that will produce a cylinder of the required diameter; and a rolling device converts it into a smooth arc approximately the radius of the finished cylinder.

Dovetails are cut in each edge so that when they are interlocked, the cylinder is formed and is ready for brazing.

The brazing operation has to be performed so that no sign of unevenness can be detected on either the outside or inside of the roll; otherwise, pattern defects will show up.

Finishing the cylinder is a hand operation because the dovetailed and brazed area must match up with the body of the roll. Even simple polka-dot patterns require several hours of painstaking work to punch out each small hole in the brazed area by hand, to perfect alignment with the die-punched holes.

How Lacquer Is Applied

The finished cylinder is mounted in collars geared to a rubber roll. A light pressure between the cylinder and rubber roll is maintained, and the fabric passes through this nip.

Inside the hollow cylinder, a small trough carries the lacquer mixture. Provision is made for feeding the lacquer to the inside of the cylinder, and a doctor blade takes care of excess material and helps force the lacquer through the holes onto the cloth.

Some effects are created completely in this one operation, the cloth going directly into a festoon-type dryer where the lacquer solvents are evaporated. The dryer is 120 ft. long and is kept at a temperature of 150° F. Lacquer fumes are exhausted to minimize danger of explosion.

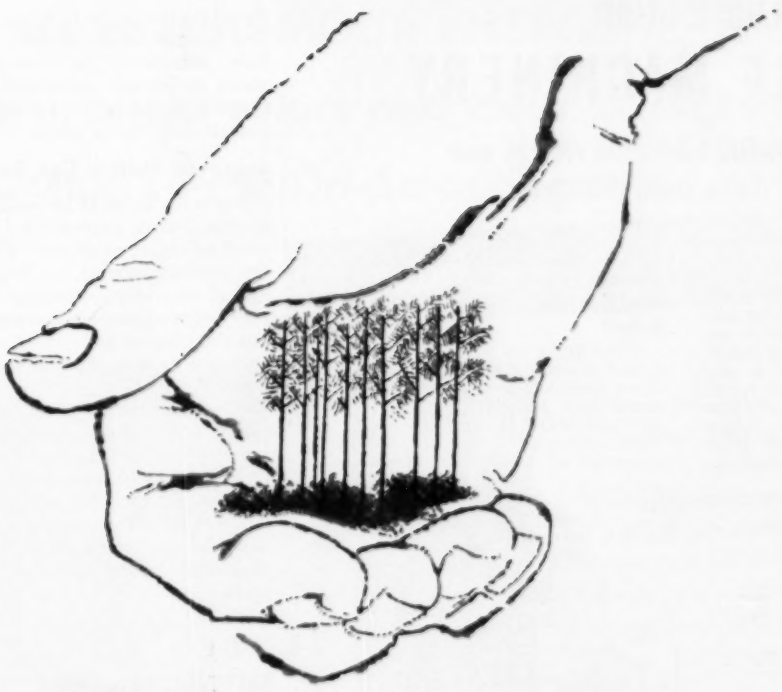
Colored lacquers alone may be used for this process, or clear lacquers plus pigments.

Flocks Added Continuously

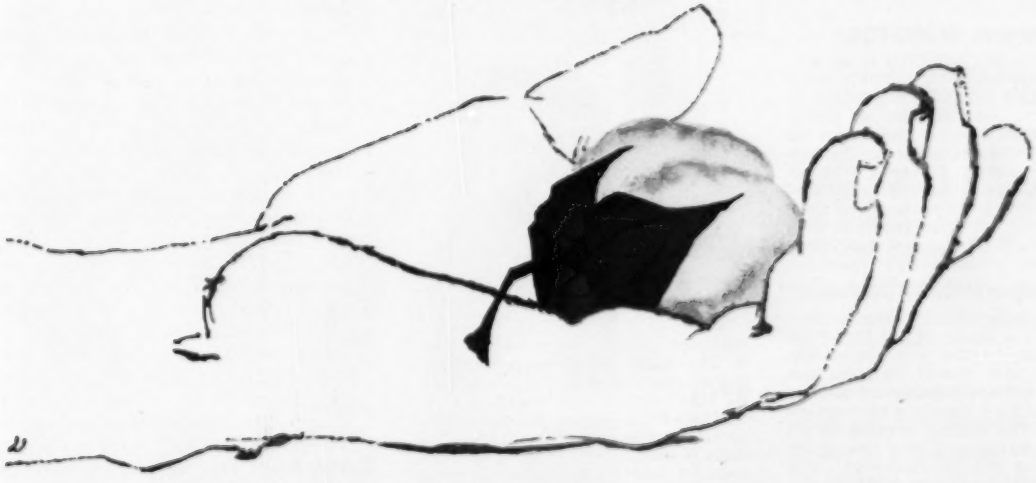
When a flocked pattern is required, the medium that is stenciled on the goods is called an adhesive and may be clear or colored, depending on the flocks to be applied.

Careful formulation of the adhesive and the control of the time interval between adhesive applications and flock deposition play a large part in the success of the flocking operation. The goods pass directly from the stencil into a vibratory flocking machine that covers the entire surface of the goods with rayon flock. Only the tacky, patterned areas retain the flock as the goods move into the dryer.

As the goods come out of the dryer,



Which hand holds your product's future?



Both, perhaps—for *only* Buckeye can supply quality cellulose from *both* cotton linters and wood pulp. This versatility is one of the unique advantages Buckeye can offer each and every account.

Whichever you choose—wood or cotton—you're always right with Buckeye. As industry's first producer of cellulose, Buckeye has the experience to "tailor" cellulose products to your exact specifications. And Buckeye backs up its products with superior customer service—the kind that *anticipates* your needs . . . that seeks to develop the cellulose best suited to your business *in advance*.

Finally, you can rely on Buckeye to see to it that your order is processed, cut, and loaded—*exactly as specified*.

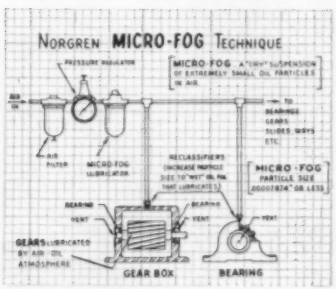
Buckeye Cellulose Corporation, Memphis 8, Tenn.

BUCKEYE
. . . first in cellulose

Now...Better Lubrication For TEXTILE MACHINERY

. . . How Norgren MICRO-FOG Lubrication reduces wear on bearings, gears, chains, cams, slides, ways

The Norgren MICRO-FOG principle has made practical the application of oil-fog lubrication to all types of textile machinery, lubricating bearings, gears, chains and other machine parts which in the past have been lubricated by splash systems, force feed systems and hand methods. Today, Norgren MICRO-FOG Lubricators are providing better lubrication — longer machine life—for large and small machines in all types of industry.

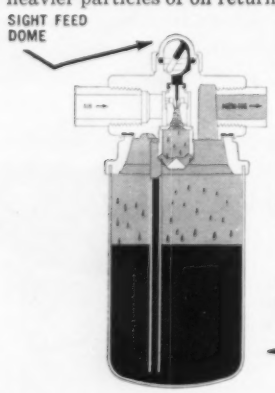


What is Norgren MICRO-FOG?

Norgren MICRO-FOG is an airborne suspension of extremely small oil particles (.00007874" or less in diameter). Because the oil particles are so small, they can be conveyed long distances through complex piping systems without reclassifying into larger drops and flooding the lines with oil—a condition formerly not possible with conventional oil-fog systems. Only one lubricator is need per machine.

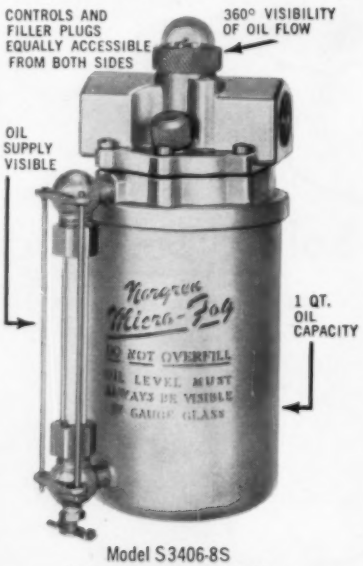
How is Norgren MICRO-FOG Formed?

Air passing through the venturi section of a Norgren MICRO-FOG Lubricator creates a pressure differential that draws oil from the reservoir. The oil is allowed to flow at a controlled rate into the venturi section. The venturi creates an oil fog, discharging it into the upper regions of the oil reservoir. The heavier particles of oil return to the oil supply. Only the finer particles of 2 microns (.00007874") or less are carried into the air line.



How is MICRO-FOG Lubrication Better?

1. MICRO-FOG particles impinge upon the bearing surfaces, covering them completely and providing a continuous film of lubricant. 2. MICRO-FOG Lubricators automatically supply just the right amount of oil for lubricating machine parts — no more, no less. 3. The slight air pressure in bearing or gear housings prevents entry of lint or foreign material. 4. MICRO-FOG makes possible complete textile machine lubrication with a minimum of air consumption. 5. 360° visibility of oil flow simplifies adjustment of oil feed rate and provides visual assurance that the lubricator is operating.


CONTROLS AND FILLER PLUGS EQUALLY ACCESSIBLE FROM BOTH SIDES
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OIL SUPPLY VISIBLE
1 QT. OIL CAPACITY
Norgren Micro-Fog
DO NOT OVERFILL

Model S3406-8S
300 BEARING INCH CAPACITY

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they pass through a brushing machine that removes traces of flock that may have adhered to the surface of the goods or become entrapped between threads. A strong air suction aids the process and carries excess flock away.

Engraved Rollers Can Be Used

For some patterns not well adapted to stencil work, conventional engraved print rollers are employed. The rollers are mounted against the large rubber roll of the stencil-printing machine, and lacquer formulations modified to suit the purpose are applied much the same way as in a regular roller-printing machine.

Combinations of flocked and colored patterns have to be done in separate runs. Roller repeats and stencil patterns have to be mated and properly fitted to get the right effect.

Combining the two types of printing produces striking effects that lift plain-dyed fabrics into the high-style bracket.

COTTON RESEARCH CLINIC

CONTINUED FROM PAGE 95

approximately 1¼ in the back zone and 2½ in the intermediate or middle zone. Total drafts are generally in the range of 30 to 60, although a draft of better than 100 has been used satisfactorily. In our experiments, sliver weights of 50 to 55 grains per yard were used in spinning yarns ranging from 4s to 10s.

There are two ends of sliver individually coiled in each can. The cans now used are 14x36. In processing 100% cotton, a full can contains approximately 20 lbs. The content is slightly less when 100% waste or waste-and-cotton blends are run.

In spinning 8s warp yarn, a full can lasts approximately 80 hrs., compared with about 25 hrs. if you use 12x6½ roving at the creel. With the supply can running 80 hrs. (10 shifts) at the creel when the frame is spinning 8s yarn, the creel can be staggered on a 200-spindle frame, with 100 cans at the creel, so that it is necessary to creel only 10 cans per shift.

To prevent overlapping of the coils and subsequent tangling as sliver is removed from the can, the cans rotate one-half revolution clockwise and then one-half revolution counterclockwise throughout the filling of the can.

Imperfections Are Minimized

The frame was operated at spindle speeds of 4,000 to 6,600 rpm. on 4s to 10s yarn of various qualities and twists. By eliminating the roving operation—one of the major sources

Here's how ARMOUR ENERGETIC® brought sharp, bright colors and clear backgrounds to Cranston's new Dri-Smooth prints

. . . and will do the same for you!

Here's what Tom Latham, Chief Chemist of the Cranston Print Works (Fletcher Division) says: "We feel Armour Energetic has made considerable improvement in the consumer appeal of our new Dri-Smooth Finish fabrics. Its superior ability to suspend soil and pigment particles in wash water and also prevent their redeposition on the cloth, has allowed us to have perfect printing execution, sharp, bright colors and clear backgrounds."

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Clipper BELT LACER COMPANY

980 Front Ave., N. W., Grand Rapids 2, Michigan

of yarn defects—and using modern drawing and good spinning, the yarn imperfections were held to a minimum and there was a substantial reduction in winding costs. There is a possibility of using the large package directly at the twister creel, which would eliminate winding entirely.

The mill has not arrived at any definite conclusions as to work assignments. However, with the elimination of the roving operation and increased assignments in spinning, there are substantial savings in direct labor.

MAINTENANCE TRENDS

CONTINUED FROM PAGE 97

tenance force is 50 men. There are 15 buildings and a general-office building at Sylacauga.

The other plants have much the same setup, but one man has several jobs in the small mills. At our smallest plant, the master mechanic and a helper make up the entire maintenance crew.

One plant has a lubrication department to lubricate production machines under the master mechanic. There are one foreman and seven oilers. This program has given excellent results. This mill is the only instance where all production machines are lubricated by the maintenance department.

In other mills, lubrication is handled by each production department. But motors are lubricated by an electrician.

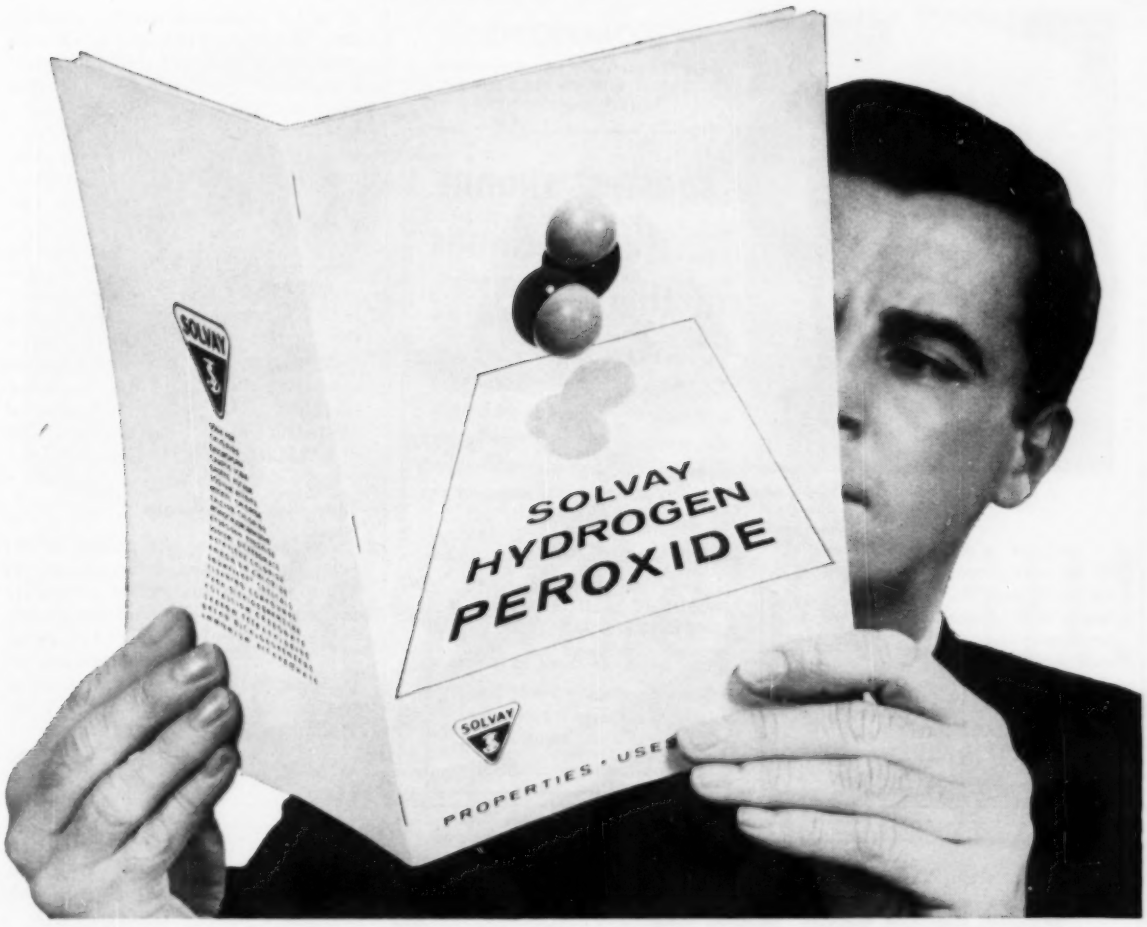
Centralized Engineering

We have an electrical engineering department composed of an electrical engineer and an instrument technician. There is also a mechanical engineering department with an engineer and an engineer-draftsman. These two departments are located in Sylacauga and work with all the plants in the group. They assist management men and mill production men with proposed building additions, machinery changes, and maintenance.

The maintenance departments are operated on a budget set up by the cost department. This budget provides each maintenance department with a given number of men, which is determined by the amount of production machinery at the mill.

Each Job Is Controlled

The maintenance men do construction work under project numbers. A project number is money designated for the installation of new machinery



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or major repairs on existing machinery. The amount of money given each project number is determined by cost-department records on similar jobs done in the past.

At present, we have very few maintenance records. But we are now planning to use preventive-maintenance records to check and maintain our machinery.

We have already started keeping records on our instruments. This program is under the direction of the electrical-engineering department. During the one year the program has been operating, we have reduced frequent calls for instrument repairs to almost no calls at all. Replacing an occasional electronic tube is about the only type of breakdown calls we receive now.

Plan Record System

We are also in the process of developing descriptive data necessary to set up a record system for preventive maintenance on electrical equipment. Preparatory work includes (1) detail data on preventive maintenance to be done, (2) a method for keeping the records up to date, and (3) the type of records to be used.

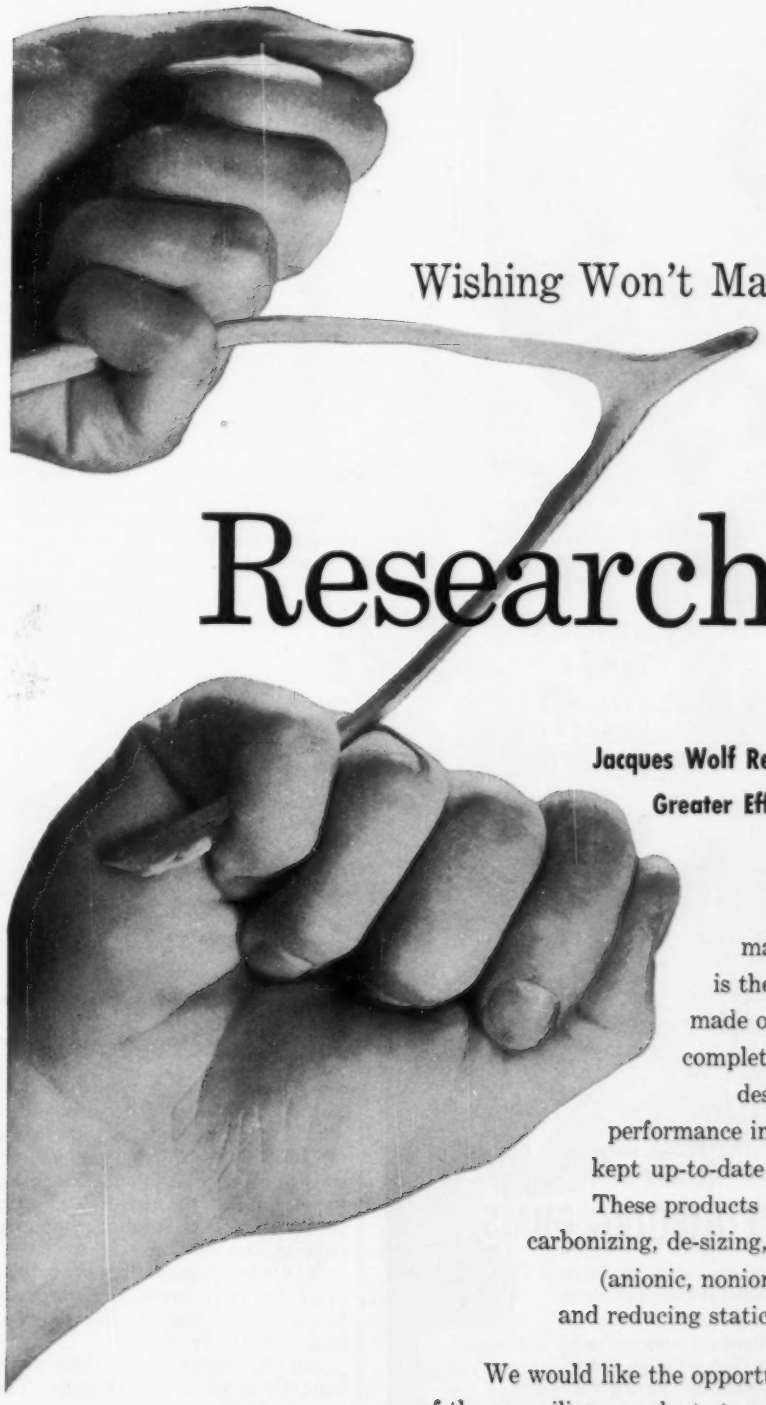
The only scheduled preventive-maintenance program we have is for electric-motor lubrication. One man spends all his time lubricating motors in a cycle. The only records consist of a notebook kept by the oiler. He lubricates each motor by a schedule and keeps his own records.

To lubricate motors, we remove the bottom grease plug and grease the motor from the top. Then we let the motor run for a few minutes before we replace the plug. Our planned program will include lubricating motors along with cleaning and testing electrical equipment.

Maintenance by Schedule

The best lubricating and maintenance procedure for spinning-frame motors and other motors from ½ to 15 hp. is to take them down once each year. At that time, we (1) wash the stator and armature with carbon tetrachloride and paint them with Glyptol lacquer, (2) clean the shaft and bearings and check them for wear, and (3) repack the bearings. The plant that follows this procedure has almost no bearing or motor failures.

We blow out all motor controls and check the contacts periodically. These parts will be cleaned and checked by a regular schedule along with motors when our new plan is used. The controls will be blown out and wiped off, and the contacts will be checked and cleaned or replaced as necessary. Then



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the control will be operated to check it mechanically.

Maintain Plant Machines

Our Birmingham plant has a scheduled production-machinery maintenance program. The program is built around records that are kept by a clerk in the quality-control department.

There is a record card for each production machine. The card is laid out by the month to schedule general lubrication and maintenance or complete overhaul. An orange or red card indicates the date for the two jobs.

Oiling schedules for spinning frames are issued each week. The scheduling card issued gives the frames (by number) to be oiled and the parts of the frames to be oiled. Cards for overhauling are issued twice a month, and the cards list the work to be done.

Maintenance men check off each item on the card as they do the work. When the job is completed, the card is returned to the file clerk. It is the responsibility of the file clerk to see that the cards are returned promptly. Production figures show that the machines are producing more and better materials since the program started.

AVONDALE'S CLOTH ROOM

CONTINUED FROM PAGE 99

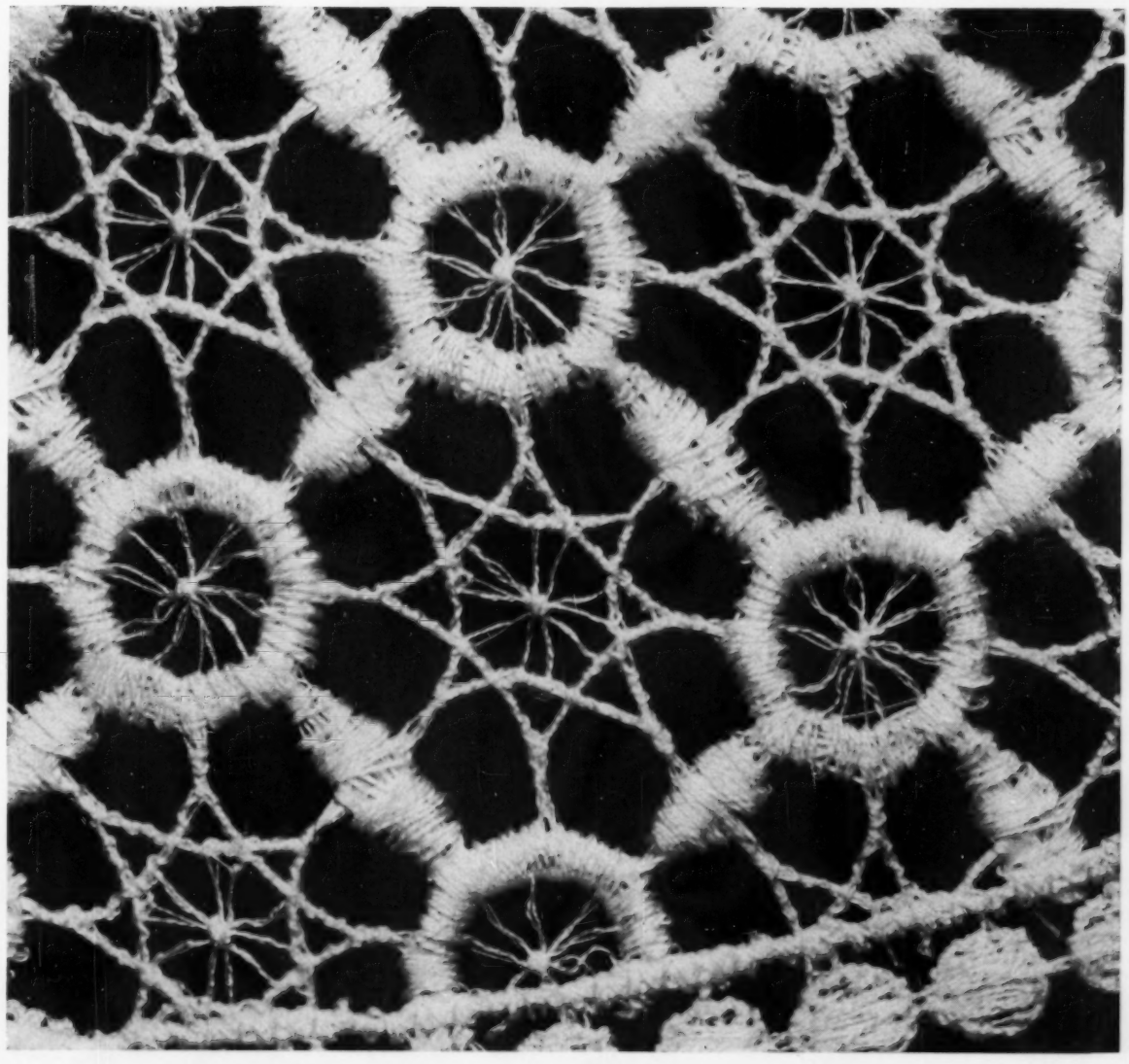
tinuous defect, a weave-room supervisor is notified and he brings the weaver or loomfixer, or both, to the cloth room to see the cloth. A hold-out ticket is made for all seconds, and this ticket is sent to the weave-room supervisor.

All reports of cloth graded are sent to the quality-control department. A weekly report is made in the quality-control department charging all seconds to the production department responsible for the defects. The departments include carding, spinning, slashing, and weaving.

A weekly seconds report is also made for each weave-room foreman, loomfixer, and weaver. The report is broken down by shifts.

Another report shows cloth styles currently running high seconds. The causes of the seconds are listed on the report. Consequently, each department head always knows the seconds caused by bad work in his area.

A quality-award system is set up to control both grading accuracy and production. A $5 check is given to the grader on each shift who has the best rating each week. The quality-control department selects the two graders



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with the best weekly record. Here's the way the system works:

A head grader spends her full time regrading cloth. She rechecks about 5% of each grader's cloth each day. Let's say the regular grader gives a 200-yd. roll of cloth 20 defect points. The head grader gives the roll 30 points. The 10-point difference in the 200 yds. is divided by two to give a five-point difference per 100 yds. A quality-rating table is set up with an arbitrary scale. Referring to the scale, the head grader gives the grader a quality rating of 84% for the day.

For Production and Quality

To obtain the production rating, each grader gets credit for 2.2 percentage points for every 100 yds. of cloth graded. Production is also figured each day.

The over-all efficiency rating to determine the quality award each week is taken by multiplying the quality rating by the production rating. Say the quality rating is 86% and the production rating 78.6%. Then 86x78.6 = 67.6% efficiency.

The quality-award checks are given to the winners by the department foreman. The mill superintendent talks personally with each employee who wins a check.

The equipment in the new burling room is all new. The 20 grading-and-burling machines were made by the maintenance department of the mill. Each machine is individually motor-driven.

The building is equipped with an air-changing system and atomizers. The temperature is 78° F.; humidity is 65 to 70%. This humidity condition tends to keep down dust. The equipment is serviced by the mill maintenance department.

Four male helpers on each shift handle all cloth so that all the graders' time is given to grading duties. The helpers put all the rolls of cloth to be inspected on the machines and remove the rolls after the grading operation.

The rolls of cloth to be graded are placed in a trough designed by Avondale and made by West Point Machine & Foundry Co. The trough has six rollers running lengthwise of the trough. The cloth doesn't have to be mounted; it's just laid into the open-top trough. The rollers turn with the cloth as the grading-machine motor pulls the cloth from around the roll.

Little Physical Handling

When the cloth is graded, the graded roll is pushed from its mounted position down onto a conveyor belt running lengthways under 10 inspect-

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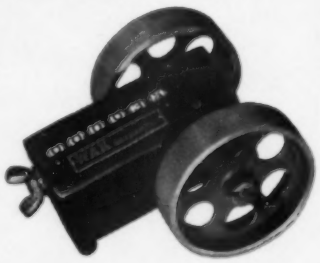

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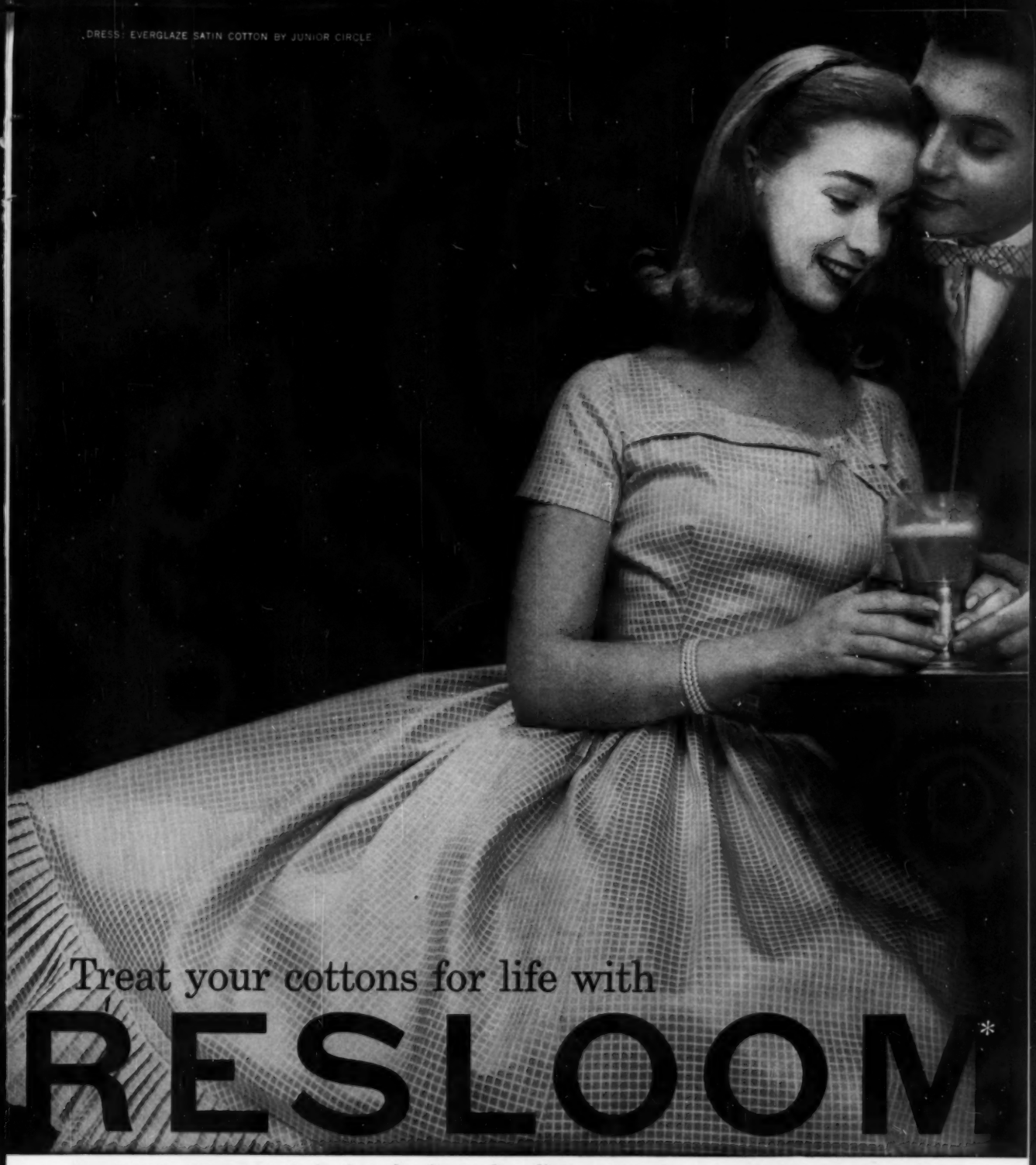

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For finishes requiring a melamine resin, top results are obtained with Resloom HP or M-75. For finishes requiring a cyclic-urea formaldehyde, Resloom E-50 meets the most exacting standards.

Still other finishes are obtained with outstanding success by using a "blend" of the two types.

All of Monsanto's Resloom textile resins have this in common: They impart a finish that does not wash out. Treated cottons keep their dimensional stability and wrinkle recovery for life.

The reason is simple. Resloom resins do more than coat the surface. They are deposited inside absorbent fibers where they actually modify fiber characteristics.

Get impartial counsel. A Monsanto representative will be glad to work with you on your cotton finishing problems. Write Monsanto Chemical Company, Plastics Division, Room 1049, Springfield 2, Massachusetts.

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ing frames.

The conveyor belt takes the cloth up an incline to a height of 10 ft. Then the belt goes over a passageway and drops the cloth back to the same floor level in an adjoining department, the stitcher room.

The cloth is separated by styles in the stitcher room and is stitched together at one of three rows of shearing-machine assembly lines. Each line consists of a sewing machine, a brushing unit, and a shearing machine. The cloth is sheared and brushed in one operation. Two shearing machines are Parks & Woolson models, and one is a Curtis & Marble model. The sewing machines are made by Merrow Machine Co.

From six to eight rolls of graded cloth in loom-length rolls averaging 150 yds. each are stitched together to form a large roll of 1,000 to 1,200 yds.

The stitched and sheared cloth is loaded into an elevator and taken to the finishing range on the floor above. Two lines of finishing ranges process the cloth. The finished cloth is left in rolls or is folded into bolts, according to the order.

Folded finished cloth is given a final inspection in an adjoining room. Then both folded cloth and cloth in rolls are packaged for shipment.

CHIQUOLA SPINNING

CONTINUED FROM PAGE 115

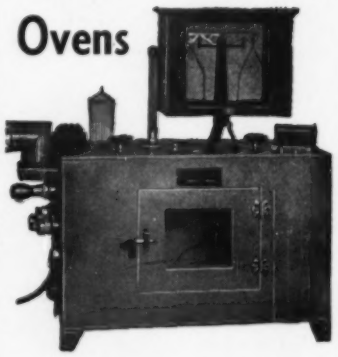
hands, permitted substantial increases in the work assignments of spinners who now run 20 sides of 276 spindles each, compared with 11 sides before the changes were made.

Duties of the spinners are: Piece up ends; creel roving; wipe all stands, guides, and weight wires once per shift; run out guides four times per shift; clean one-third of the roving skewers and rods every 120 hrs.; clean one-third of the front steel rolls every 8 hrs.; wipe one-third of the bottom and top creels every 120 hrs.; clean one-third of the rails every 120 hrs.; wipe one-third of the roller bars every 120 hrs.; wipe one-third of the gear caps every 120 hrs.; clean lap sticks once per doff.

The roll pickers are assigned 27 sides per shift. Duties are: pick top rolls once every 24 hrs.; pick revolving clearer grooves every 24 hrs.; clean back steel rolls every 120 hrs.

Clean-up hands are assigned 74 sides, and their duties during the 8-hr. shift are: Wipe bottom and top roving on four frames; pick 16 sides of steel-roll stands; wipe 16 sides of roller

Textile Testing Ovens



EMERSON OVENS

For accurate testing of water content in yarn. The 8 Basket Oven, shown above, can be furnished with 8 baskets 3" sq. x 6" deep or 6 baskets 4¼" sq. x 6" deep, complete with weighing balances, weights, and automatic temperature control. Table space 20" x 40".

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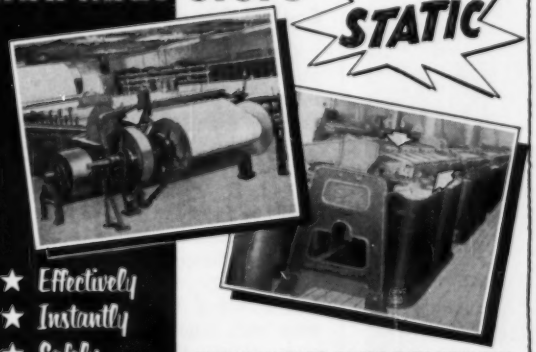

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SIZE OF MACHINE .....
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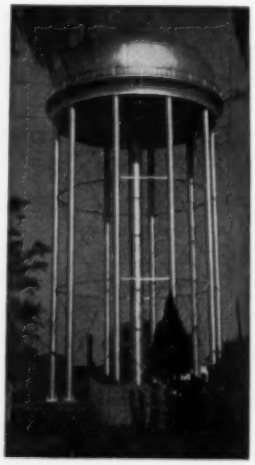

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bars; clean front revolving clearers on eight frames; clean back revolving clearers on two frames; wipe heads on four frames; clean roll weights on four frames; clean separators and ring rails on 20 frames.

Drives To Be Changed

The 120 filling frames on 42s yarn have not been changed, although it is planned to replace band with tape drives in the future.

The filling frames are 240- and 320-spindle models. Some of the frames are $2\frac{3}{4}$-in. gauge; and the others are 3-in. gauge. All rings are $1\frac{3}{8}$ ins. in diameter. Spindle speed is 9,946 rpm.; twist multiplier is 3.84; break factor is 1,850. The yarn is spun on $8\frac{3}{8}$-in. quills from 2.25-hk. roving with a twist multiplier of 1.28.

The spooling department has two Barber-Colman Type C 216-pocket spoolers that have a drum speed of 1,200 yds. per min. Each machine requires two operators. The cheeses made on these machines contain 61,000 yds. of yarn.

Two B-C warpers, running 900 yds. per min., make beams holding 30,500 yds. of yarn. Snick plates are checked every 4 hrs. while the machines are shut down for cleaning. Tying in is done with two stationary B-C machines.

Control Charts Are Used

Careful control over spinning and other operations is maintained with the assistance of a control board.

Daily charts are posted covering yarn numbers, break factors, yarn numbers from warper beams, warper stops, and cloth weights.

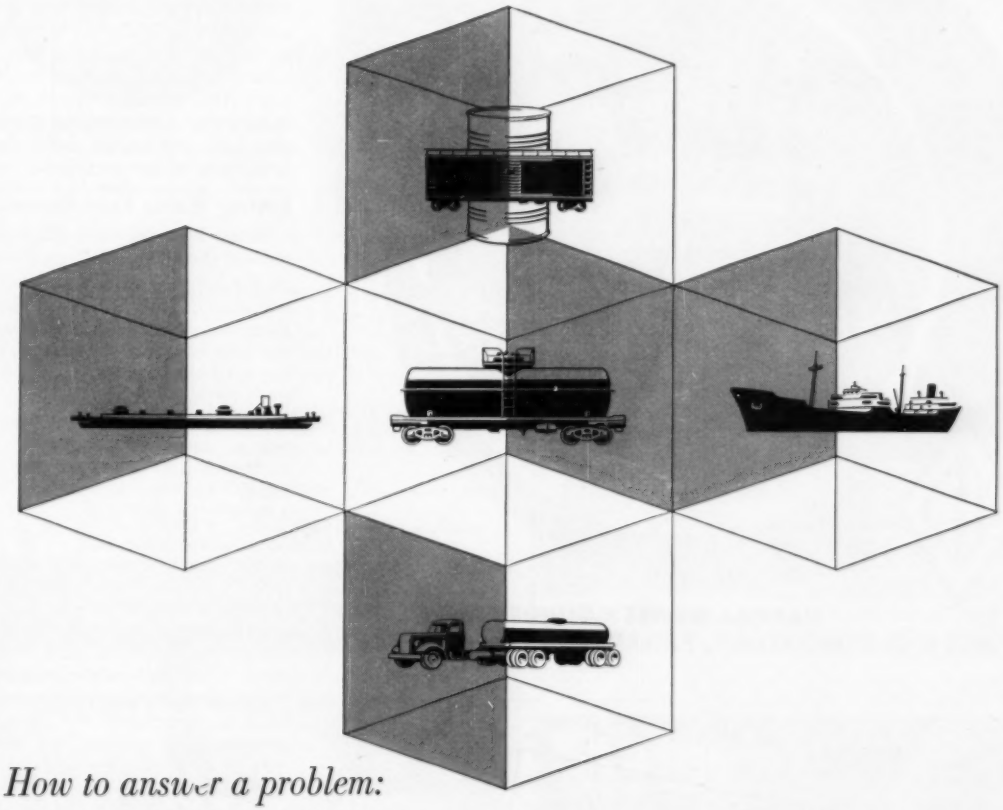
Weekly charts cover yarn evenness, yarn appearance, spinning efficiency, weaving efficiency, card-sliver weights and evenness, drawing-sliver weights and evenness, roving sizes and evenness, nep count, percentage of seconds, shorts and remnants by style, and cloth break (warp and filling) by style.

WEATHERPROOF FABRICS

CONTINUED FROM PAGE 127

proofing was imperative in the semi-tropical New Orleans climate. Because no knowledge was available on the behavior of high-pickage fabric toward chemical treatment, samples of the fabric were given one padding and two paddings in a mildewproofing bath of copper 8-quinolinolate. Chemical analyses of the samples showed two paddings were needed to obtain

DOW



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the required 0.30% copper content.

One 22x24-ft. tarpaulin for covering the pitcher's mound and another 42x46-ft. fabric for covering the batter's box were fabricated. Put into service in April, 1951, the tarpaulins have been used throughout five complete seasons and are now entering service for the sixth season. Local seasons extend from April to November. Although the covers have received no waterproofing treatment, they have not leaked under the local conditions of heavy rainfall.

Resists Water Four Years

After two seasons' use, chemical analysis showed that a large percentage of the original mildewproofing agent had leached out. The tarpaulins were therefore retreated. The treatment was also repeated before the start of the fifth season. The copper 8-quinolinolate, in mineral spirits, was effectively applied by simply mopping it on —a job finished in 1 hr.

After the completion of the second, third, fourth, and fifth seasons, 1-sq.-yd. samples were removed from the tarpaulins and their physical properties evaluated in accordance with ASTM procedures. The results are shown in Table 2.

In general, the tarpaulins retained their water resistance after four years' use. The hydrostatic-pressure test shows that the tarpaulins have lost most of their water repellency, probably caused by the leaching out of the natural waxes; but in spite of the wetting out of the fabric, the resistance to the passage of water is still present.

There was no indication of any degradation of the tarpaulins until the fourth season, when a large decrease in breaking strength was found. Efforts to determine a cause for this sudden decrease were made. Microscopic examinations showed considerable fiber damage, but this damage could not be directly associated with the presence of any fungal growths on the fibers. It was concluded that the marked deterioration of fibers was probably caused by bacterial attack. This conclusion is further substantiated by the five-year-test results that show no appreciable change from the results after four seasons' use.

The mildew treatment before the fifth season probably halted the bacterial attack and the subsequent degradation. Fluidity tests revealed no significant mechanical or chemical damage, and chemical analysis revealed no excessive increase of any chemical substance.

Make Comparative Tests

To compare the weathering properties of the high-pickage field covers

For more information, write direct or use Reader-Service post card.

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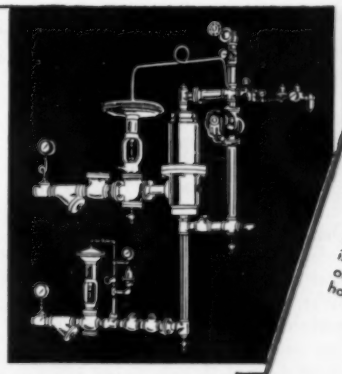
Pick STEAM INJECTION WATER HEATERS



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October 27, 1955

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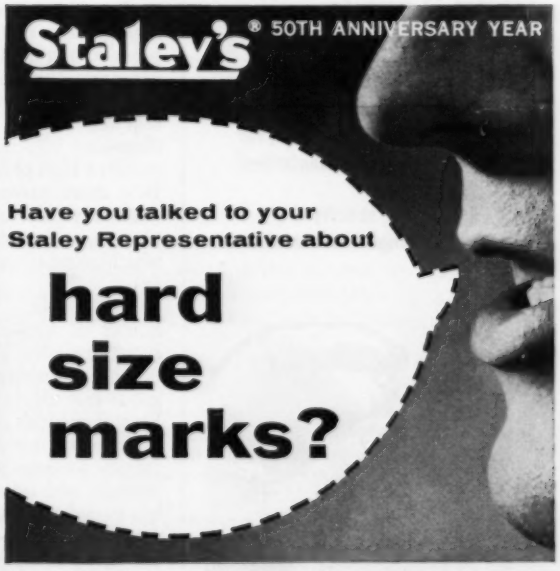

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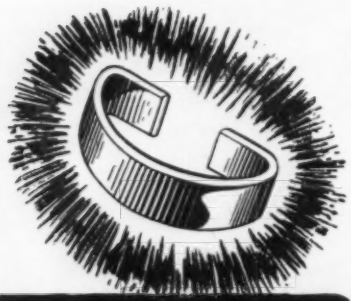

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CONTINUED FROM PAGE 202

with a standard heavy-duty field cover, samples of the high-pickage tarpaulin and a commercial 22.5-oz. waterproofed and mildewproofed tarpaulin were placed on open-back outdoor racks in January, 1951, for continuous exposure. The racks faced south and were inclined 45° to the vertical.

One-yard samples of the high-pickage fabric were removed from the rack at the end of two months and six months and were tested by ASTM procedures. Similar tests were made on an unexposed control sample. Because of a short supply of the treated commercial tarpaulin material, it was evaluated only in the unexposed state and after six months' exposure. The results of these tests are given in Table 3.

In general, weathering detrimentally affected all physical properties of the high-pickage fabrics except that of water resistance. The hydrostatic pressure required to cause leakage was 19% higher at the end of two months' exposure and 5% lower after six months' exposure than the unexposed fabric. As measured by the drop penetration method, leakage decreased from an initial 0.5 cc. to none at the end of six months.

Fabric Has Many Uses

Degradation of the commercial tarpaulin was greater than that of the high-pickage fabric. The hydrostatic pressure required to cause water to penetrate the commercial fabric decreased 41% in six months while that required for the high-pickage fabric decreased 5%. The inherently water-resistant high-pickage fabric was about 10% more resistant to penetration by water after six months of weathering than was the commercial tarpaulin, which originally was 46% more resistant.

Lightweight, extra-dense, cotton fabrics of various weights and constructions have attracted the interest of the automotive industry, canvas-goods manufacturers, and sail makers. Several agencies of the Department of Defense are investigating dense cotton fabrics for rain wear, flight clothing, tentage, and other uses. One agency has issued procurement specifications. Orders for extra-dense cotton fabrics are being accepted by one textile organization, and others are working toward this end.

To enable the attachment to be readily adaptable to all model looms, a new design was developed last year for driving the tension bar from above the warp. Both this overhead model and the original model result in better operation and reduced construction cost. The attachment is commercially produced by two manufacturers of loom equipment. Engineering drawings may be obtained from SRRL.

GEORGIA T.O.E.

CONTINUED FROM PAGE 137

leads, baking, dipping, and baking them again.

"We clean larger motors of 30 to 75 hp. while the motors are in place. We check the bearings and paint the windings with an air-drying-type insulation once each year.

"We think it is best to have the maintenance department blow out and oil motors to fix the responsibility for this work, which must be done correctly."

Lubricate Motors Often

Mill F—"Our mechanical department has charge of general maintenance, service, and repair for all d.c. motors, special-type motors, and large motors. The maintenance includes motors such as drives for dyeing machines, slashers, compressive-shrinkage machines, etc.

"The motors are inspected, blown out or cleaned, and lubricated by a definite schedule. They are greased about once every three months. They are oiled weekly. The d.c. motors are checked every two months to replace brushes, dress up commutators, clean, and grease, if needed.

"Smaller motors such as individual drives are maintained by each department. They are oiled by fixers or oilers."

Mill G—"One man is responsible for (1) oiling open bearings and shafts, (2) greasing motors that have grease fittings, and (3) blowing out motors. Sealed motor bearings are repacked every three to five years. The maintenance department is responsible for all equipment where 550 v. are used."

POINTERS

CONTINUED FROM PAGE 139

7. Consistency

A good manager of people trains himself to be consistent. Because of health, personal problems, interest in something that demands undivided attention, or just plain forgetfulness, any person has a tendency to be inconsistent in his daily relationship with his fellow man. The supervisor is no

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Brilliant Blue RCL for bright reddish shades with very good fastness to chlorine and laundering.

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Navy Blue B newest in the line and of excellent light, washing and chlorine fastness; particularly suitable for desirable navy shades.

Navy Blue BRF for bright navy shades with very good light fastness.

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All brands are available in powder form and also as pastes of "INFRA" quality—finely milled to offer instant and complete dispersion for greater ease of working to produce speck-free light shades. We urge you to investigate these fine products for your color-matching problems.

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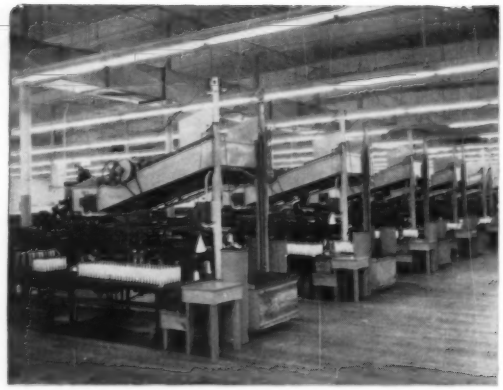
Automatic Cone or Tube Winders for warping, dyeing, twisting, quilling, sales.

Can be equipped with any one of a variety of slub catchers and inspection devices.

Production up to 1000 bobbins per hour per operator.



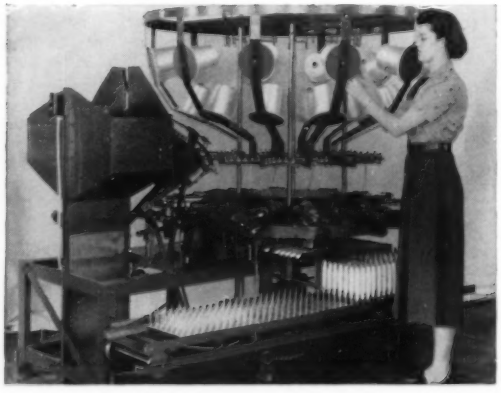
Abbott Traveling Spindle Automatic Quillers

For winding cotton, spun rayon, worsted, etc., equipped to doff automatically into baskets, or stack automatically into boxes.

For rewinding woolen yarn from mule and ring frames.

For winding filament rayon and nylon, etc., with automatic pinboard attachment or wide belt inspection conveyor.

Production up to 2500 bobbins per hour per operator.



Abbott Fully Automatic Radial Quiller

For smaller lots and widely diversified mills.

For winding cotton, spun rayon, filament rayon, worsted, wool, etc.

Can be arranged to deliver bobbins to Pinboard Attachment, or into baskets, or into wide belt conveyor.

One operator can run several machines producing up to 2000 bobbins per hour per operator.

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ABBOTT MACHINE CO., INC.

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exception; the more responsibility a man has, the greater the tendency toward inconsistency.

But the responsibilities a supervisor accepts by virtue of his position demand that he train himself to be consistent. A supervisor may possess the first six keys to the doors that lead to good human relations, but he cannot unlock the last door until he has obtained the key named "consistency."

A smile one day and a frown the next, for no obvious reason, not only puzzle the employee—they worry him. A pleasant "Good morning" on Monday, Tuesday, Wednesday, and Thursday, followed by a cold stare on Friday, can be disconcerting. A readiness to discuss the employee's problem on one occasion and a brusque brush-off at another time don't make for good employer-employee relationships.

With these seven basic keys, the supervisor can acquire the art of supervision; and it definitely is an art. Since the profession deals with people as well as with machines, it must be humanized; but it can also be systematized. Good supervision, good management, good human relations don't just happen. They are brought about by careful thought, intelligent planning, and hard work. The "seven keys" are just the beginning, but without these keys there is no beginning.

DEGUM SILK

CONTINUED FROM PAGE 156

mins. to prevent channeling of the boil-off liquor. This preboil period requires 30 to 45 mins., depending on the quality of the silk. Tram and organzine will require 45 mins. and shantung dupions about 30 mins.

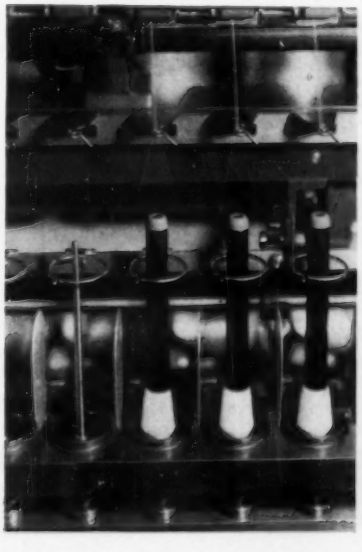
After the preboil, the steam is turned on and the temperature brought to 180° F. The liquor is circulated for 10 mins. through skeins, and a pint of Secco and 10 lbs. of Olate soap flakes are added to the bath. The soap flakes should be previously dissolved in a pail before adding to the machine. Circulation is maintained, and the turning procedure previously described is followed. After 30 mins. a skein is removed, rinsed, dried, and examined. If it is not completely degummed, return the skein to the boil-off bath for 5 mins. and then recheck it.

After all the gum is removed, drop the boil-off bath and rinse the skeins in fresh hot water at 180° F. for 5 mins. The rinse bath may be used for dyeing. Color and salt can be added directly to the bath.

Advantages of this boil-off system are relatively low temperatures and a minimum of handling. These factors produce a high-quality silk with minimum exfoliation at a saving in labor costs.

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 148



Sliver-to-Yarn Spinning

The Japanese OM-K roving-to-yarn and OM-S sliver-to-yarn frames are now being built with 2½-in. rings and 10-in. lifts to meet American requirements for larger packages. In the larger gauge, the OM-S frame accommodates 6½-in. sliver cans with about 3 lbs. capacity.

Other improvements include anti-balloon rings controlled by an independent lifting mechanism, automatic one-shot lubrication for head-end bearings, electric stop motions on doors and gear covers, magnetic cylinder brake, automatic yardage knock-off motion, two-speed motor, and automatic cam-changer mechanism for finisher drawing frames.

The machines are manufactured by O-M Spinning Machine Mfg. Co., Osaka, Japan, and sold in North America by Edward S. Rudnick, Olympia Bldg., New Bedford, Mass.

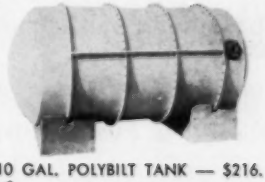
Circle T-18 on Reader-Service Card

POLYBILT®

FIBERGLASS TANKS

470 GAL. TANK — $324.

New lightweight, high strength, translucent tank for storage of acids, bleach, formaldehyde, alum, saline solutions, solvents and most mill chemicals. Any capacity tank is available at low cost by joining standard tank sections that are mass produced on 250 ton presses from matched metal dies. Write for complete brochure.

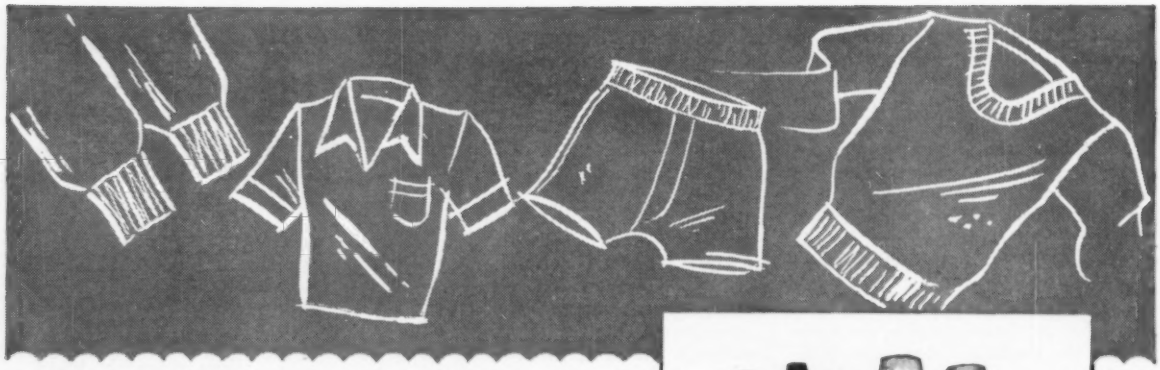


310 GAL. POLYBILT TANK — $216.

POLYETHYLENE PAILS
Non-corrosive, unbreakable. Used by hundreds of textile plants. 14 Qt. size $3 ea. in lots of 6. Send for bulletin.

MODEL 53 PORTABLE SPRAY GUN
Operates from inexpensive CO_2 cartridge. Cast aluminum. For all industrial uses. Send for bulletin.

JONES & HUNT, INC.
220 Emerson Ave., Gloucester, Mass.

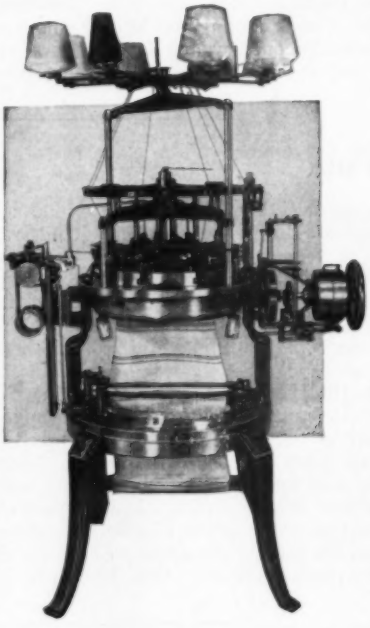


a regular "ONE-MAN KNITTING MILL"

With the minimum of attention, this versatile, high-production machine can be set to turn out many varieties and combinations of stitches (one by one or two by two) striped fabric of unlimited patterns . . . English or round welt, French or tubular welt and clearing course or draw-thread.

Operates as a single feed machine or in any combination of feeds to produce fabrics for cuffs, sweater bottoms, collarettes, underwear, outerwear, sportswear and beachwear . . . Furnished with belt or individual motor drive.

For complete information on the Wildman Rib Fabric Striping Machine, write us today.

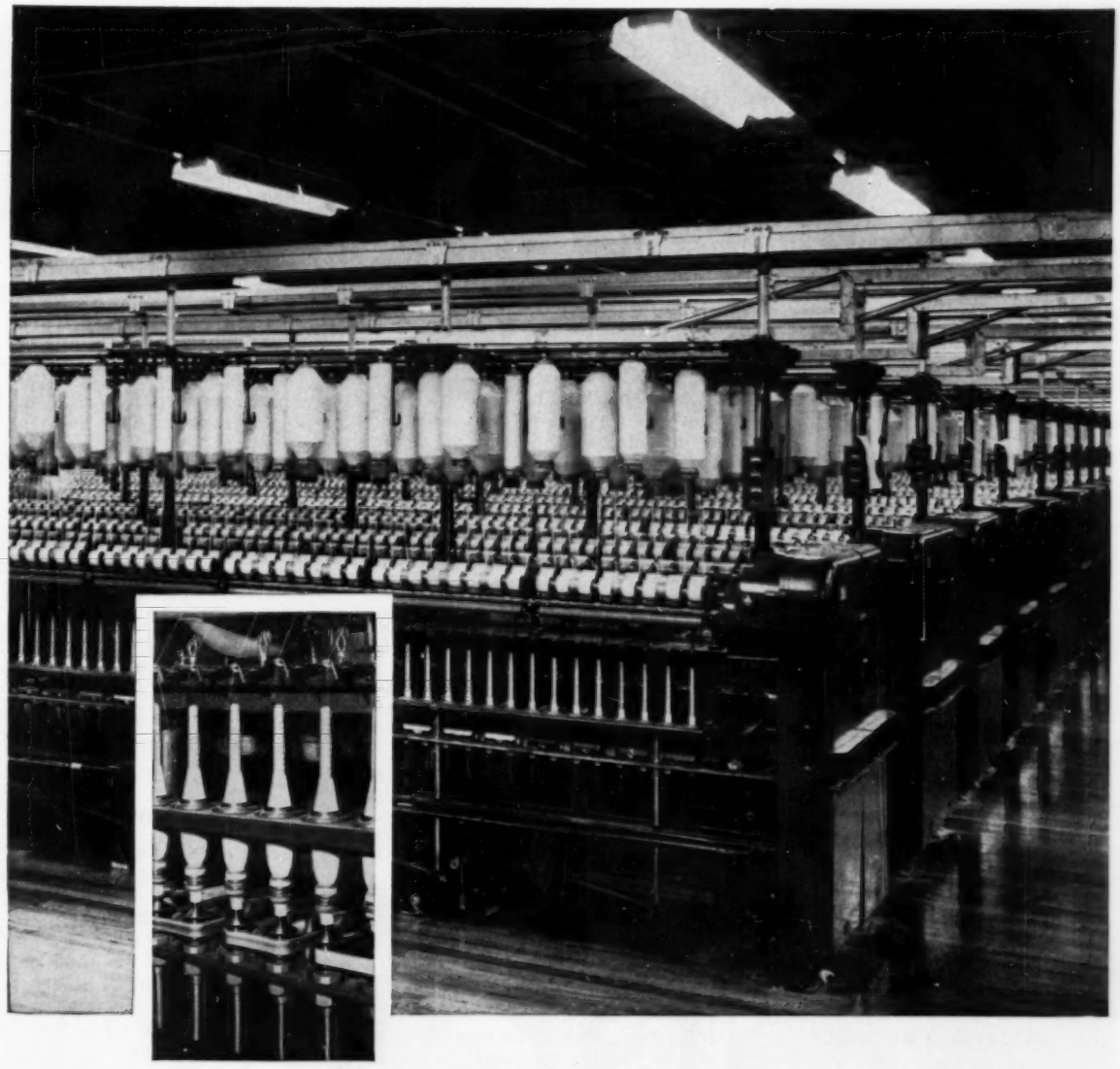


WILDMAN RIB FABRIC STRIPING MACHINE

WILDMAN *makes the machines that tend to their own knitting.*

WILDMAN MFG. COMPANY, NORRISTOWN, PA.

Manufacturers of: **FULL FASHIONED HOSIERY MACHINES; CIRCULAR MACHINES FOR OUTERWEAR, UNDERWEAR, SPORTSWEAR, TRIMMINGS; STOP MOTIONS**



Marquette TOP DRIVE FILLING SPINDLES
increase production 15% to 18%

The above photographs show a typical installation of the new Marquette Top Drive Filling Spindles, with hardened steel blade and exclusive full-floating footstep bearing.

Marquette Roller Bearing Spindles are giving excellent results in many mills. Among their advantages are higher spindle and front roll speeds, low ends down, savings in doffing, savings in the weave room, and savings in power and maintenance.

Marquette Roller Bearing Spindles can produce more yarn at lower cost in *your* mill. We'll be glad to prove this through a test installation. Contact our home office or one of our representatives.

Representatives: WILLIAM P. RUSSELL, BOX 778, ATLANTA, GA.
C. H. WHITE, MOUNT HOLLY RD., ROUTE 6, CHARLOTTE, N. C.
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Latest, complete stock and weight handbook. Tells at a glance the types, sizes and shapes of steel warehouse products carried for you by one of the South's largest steel warehouses. Saves you valuable time. We'll be glad to send a copy on request. Then, you can easily order by phone, whatever you need, one piece or a carload.

- Cold-finished Shafting
- Carbon Steel Bars and Shapes
- Plates and Sheets
- Structurals
- Stainless Steels

EQUIPMENT & SUPPLY NEWS

CONTINUED FROM PAGE 207

Giant-Size Capscrews

Giant-size socket capscrews have been added to the stock of cap screws made by The Bristol Co., Socket Screw Div., Waterbury 20, Conn. Capscrews are now available in sizes up to 1½ ins. in diameter and 12 ins. long.

Circle T-19 on Reader-Service Card

Hydraulic Transmission

A variable-speed hydraulic transmission in a compact self-contained unit is manufactured by Gerator May Corp., Maryland Ave. & Oliver St., Baltimore 3, Md. The unit provides instantly variable speeds without stopping, automatic braking, positive speed sensitivity, and reverse rotation.

Circle T-20 on Reader-Service Card

NEMA Motors

A line of general-purpose ball-bearing polyphase motors in rerated NEMA frame sizes 182 through 326 has been announced by Wagner Electric Corp., 6400 Plymouth Ave., St. Louis, Mo. The motors are built in 1- to 30-hp. ratings, 3-phase, 60 cycles, 1,750 rpm.

Circle T-21 on Reader-Service Card

Air Conditioners

A line of complete central-station cabinet-type air-conditioning units is available from American Blower Corp., Detroit 32, Mich. The main features of the line are compactness, simple installation, and design flexibility. The capacity ranges from 600 to 48,000 cu. ft. per min.

Circle T-22 on Reader-Service Card

Fuel-Oil Additive

An additive for heavy fuel oils has been announced by Stewart-Hall Chemical Corp., 6 N. MacQuesten Pkwy., Mount Vernon, N. Y. The product, called Desludgit, is designed to break up oil-water gels, dissolve sludge, and emulsify water in oil. Fuel systems remain clean from tank to chimney when the product is used.

Circle T-23 on Reader-Service Card

Portable Filter

A filter unit that can be moved from one machine to another has been announced by Schroeder Bros., 3116 Penn Ave., Pittsburgh 1, Pa. The filter element will remove particles as small as 10 microns but will not remove oil additives or flame-resistant fluids. Hydraulic power is furnished by the machine itself, but a pump and motor can be supplied as optional equipment.

Circle T-24 on Reader-Service Card

Industrial Stools

Adjusto Equipment Co., 2144 Madison Ave., Toledo, Ohio, has announced a line of fixed-height stools in seven ranges from 18 to 30 ins. high. Welded and riveted joints insure rigid construction. Back rests, wooden or cushion seats, and special finishes are optional.

Circle T-25 on Reader-Service Card

Magnetic-Disk Brake

A magnetic-disk brake for rerated NEMA motor-frame sizes is available from Stearns Magnetic, Inc., Milwaukee 46, Wis. The brake is for motors of 50 to 100 hp.

Circle T-26 on Reader-Service Card

Device To Oil Cutting Dies

A device to flood dies with cutting oil while stock is being threaded with hand dies or power drives is being manufactured by The Ridge Tool Co., Elyria, Ohio. The portable device consists of a removable 15-in.-wide chip pan in an oil reservoir. A hose connects the oil reservoir to a hand-operated oil pump gun. The oil is screened and used over and over.

Circle T-27 on Reader-Service Card

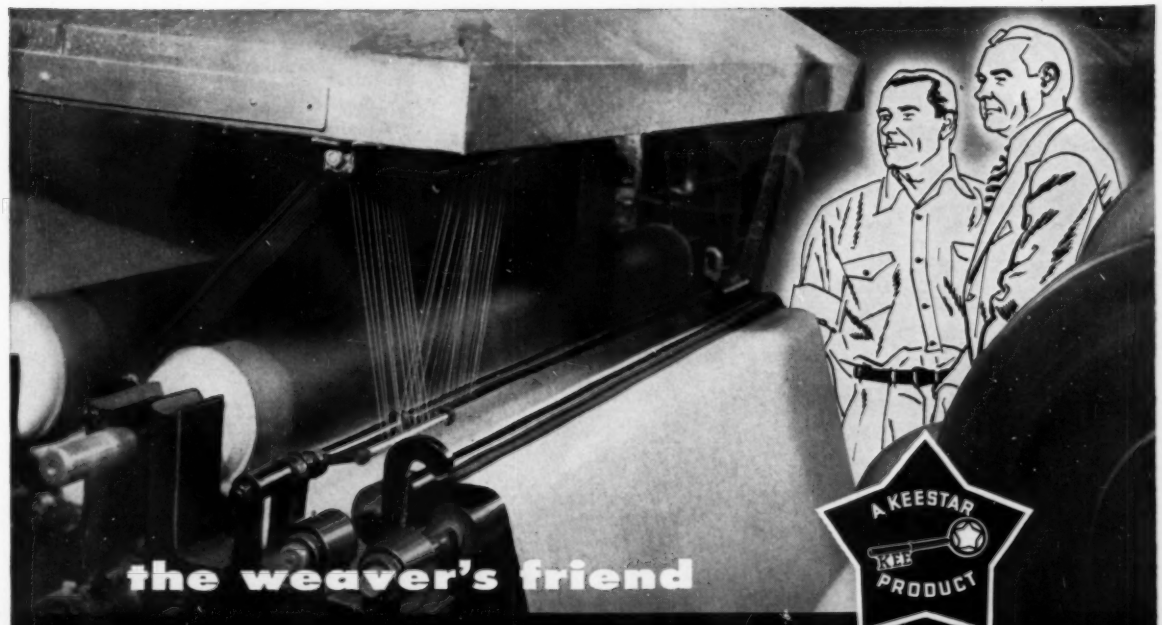
Emergency Lighting Unit

An emergency lighting unit containing a lifetime battery, made by Dynaseal Lighting Corp., 5 Hadley St., Cambridge 40, Mass., is said to give many years of service with no maintenance at all. The unit includes automatic charging facilities to keep the battery fully charged all the time.

Circle T-28 on Reader-Service Card

Handy Oiling Pump

A portable hand pump for refilling all types of oil cups and reservoirs quickly and conveniently is being manufactured by Trico Fuse Mfg. Co., 2948 N. Fifth St., Milwaukee, Wis. The tool is also handy for oiling bear-



VICTOR Mill Starch

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Charles C. Switzer, Vice President
TEXTILE SALES DIVISION
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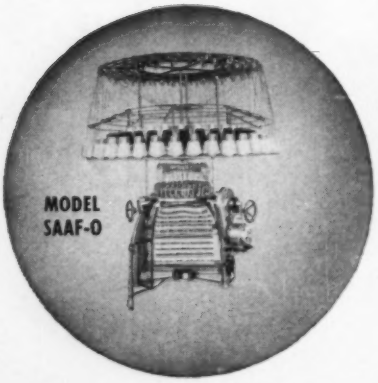
THE KEEVER STARCH CO. ★ GENERAL OFFICES ★ COLUMBUS 15, OHIO

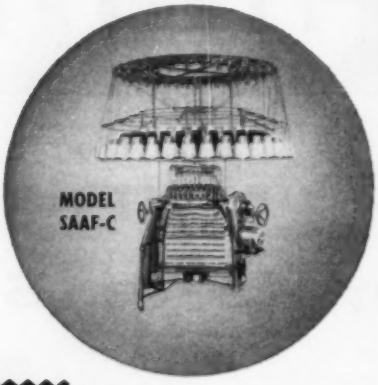
Processors of corn, wheat and blended starches for industry since 1898



These features make SUPREME

the latest word in modernized, low-cost knitting

of automatic, variable striped, patterned or solid jersey *with* or *without* knit-on simulated rib trim and draw thread section separators



HIGH SPEED PRODUCTION

Large number of feeds, rugged construction and stationary yarnstand give you vari-striped and patterned fabrics at unprecedented rates. Standard 26" machine has 32 four color striping boxes — 32 three position pattern wheels—32 automatic pattern placers.

TREMENDOUS VERSATILITY

Striping boxes, pattern wheels and placers on every feed let you pour out an infinite variety of striking, multi-colored fabrics — with pattern inserts twice the size previously possible. Knit a wide variety of fabric construction and textures with virtually any type of natural or synthetic yarn.

HIGH QUALITY AT LOW COST

Knitting efficiency and quality are insured by these ingenious new features—128 cone, "step-design" (Pat. Pend.) yarnstand, new knitting elements system, new striping box with easy, manual setting, new pattern placer with slideable studs for fingertip control and new, scissor-type, synchronized "no-waste" cutters.

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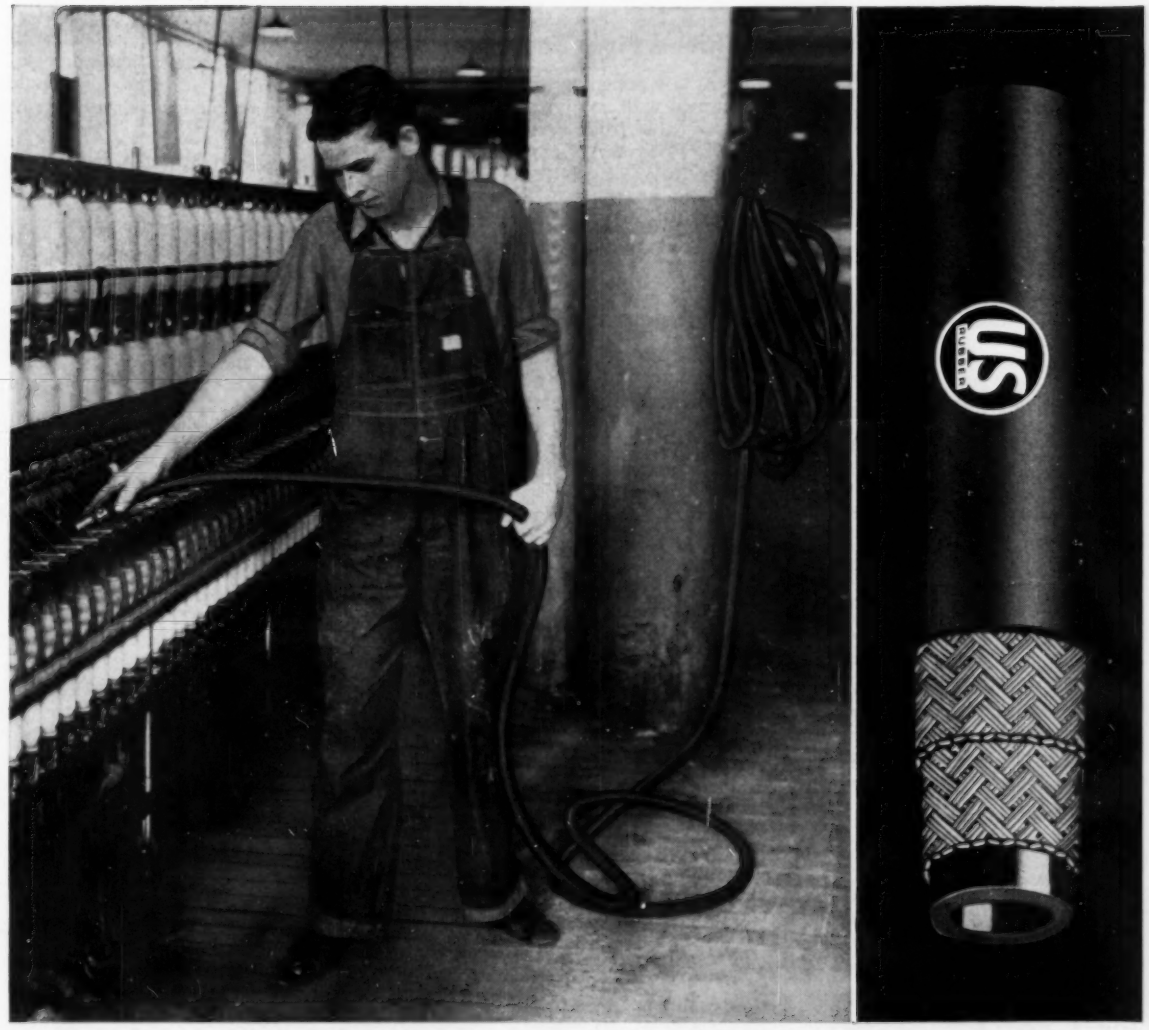
The PAYD Plan

For more information, write direct or use Reader-Service post card.

US RUBBER Trojan Air Hose



"high performance at low cost"

New U. S. Trojan Air Hose (P-471) has been developed to provide the textile industry with a high-performance hose at low cost. This new hose combines light weight and extreme flexibility with a truly rugged construction. This combination provides a general blow-down and clean-up hose that handles easily — won't twist or kink. Its smooth, green cover is abrasion resistant.

New U. S. Trojan Air Hose is available in continuous lengths, up to 500 feet, at any of the 28 convenient "U. S." District Sales Offices. Or contact us at Rockefeller Center, New York 20, N. Y.

US RUBBER Mechanical Goods Division

United States Rubber

U. S. RING TRAVELERS

A "U.S." Service Man is right near you

You can rely upon U. S. for prompt traveler delivery

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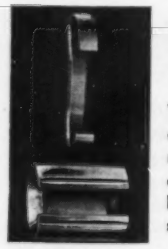

For Your BLENDS try "Bevel Edge"

The anti-friction design of these travelers, gives reduced end breakage, and in other ways helps spin blends more smoothly.

"A Style and Size for Every Textile Fibre!"

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ings, cutting tools, conveyor and chain drives, gears, pipe-threading operations, and spindles on textile machinery.

Circle T-29 on Reader-Service Card

Thread Pipes Fast

A quick-opening pipe threader to be used with any type of power drive is available from Beaver Pipe Tools, Inc., Warren, Ohio. The device threads 1-, 1¼-, 1½-, and 2-in. stock with only one set of full-width high-speed dies.

Circle T-30 on Reader-Service Card

Waterless Hand Cleanser

You can clean your hands without using water. Sugar Beet Products Co., Saginaw, Mich., is providing a 5-oz. polyethylene tube of SBS-30 waterless skin cleanser so that you can squeeze the cream product directly onto your hands. You can clean your hands about 60 times from one tube.

Circle T-31 on Reader-Service Card

Fork-Truck Drive

An automatic transmission for fork lift trucks has been announced by Towmotor Corp., 1226 E. 152nd. St., Cleveland 10, Ohio. Truck drivers do not have to change gears on the drive. Another development by towmotor for fork trucks is an unloader attachment. Mechanical handling of pallets, cartons, crates, bags, and drums is possible without manual handling.

Circle T-32 on Reader-Service Card

Spectacles for Inspection

Safety spectacles designed for inspection wear have been announced by Watchemaket Optical Co., 232 W. Exchange St., Providence, R. I. The lenses are said to reduce eye fatigue and eye strain from close overhead lights by softening the glare and absorbing almost 100% of all harmful ultraviolet rays.

Circle T-33 on Reader-Service Card

Sheaves for Drives

A line of lightweight sheaves, Textlite, for fractional-horsepower and light-duty drives has been announced by Allis-Chalmers Mfg. Co., 1056 S. 70th St., Milwaukee 1, Wis. The line includes single-groove sheaves in both bushed and bored-to-size construction.

Circle T-34 on Reader-Service Card

Heavy-Duty Casters

Heavy-duty casters that support 950 lbs. for long distances at towing speeds up to 20 mph. have been added to the line of casters made by Bassick Co., 437 Howard Ave., Bridgeport 2, Conn. A second caster model with spring-wheel construction provides shock-absorbing features to handle fragile or valuable loads on rough surfaces.

Circle T-35 on Reader-Service Card

Tension-Regulating Drive

A low-cost tension-regulating drive is being made by Reliance Electric & Engineering Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio. The VS-100 drive has a capacity at constant tension from ⅛ to 2 hp. Applications include inspection tables.

Circle T-36 on Reader-Service Card

Industrial Engines

Industrial engines that operate on gasoline, liquid petroleum gas, or natural fuels have been introduced by Hall-Scott Motors Co., 2850 7th St., Berkeley, Calif. The compact engine weighs less than 1,300 lbs. and develops 200 hp.; the weight ratio is less than 6 lbs. per hp.

Circle T-37 on Reader-Service Card

Small Automatic Lubricator

A small automatic lubricator to lubricate precision machines has been announced by Bijur Lubricating Corp., 151 W. Passaic Ave., Rochelle Park, N. J. The lubricator is connected to a one-pint-capacity reservoir and is driven by the machine it lubricates or by a 1/20-hp. motor.

Circle T-38 on Reader-Service Card

Self-Leveling Mount

Machine mounts with built-in features to level the machine are a product of MB Mfg. Co., Div. of Textron-American, Inc., 1060 State St., New Haven 11, Conn. The mount consists of an Isomode pad cemented to a metal plate. Other parts are a threaded bolt, flanged leveling nut, and lock nut.

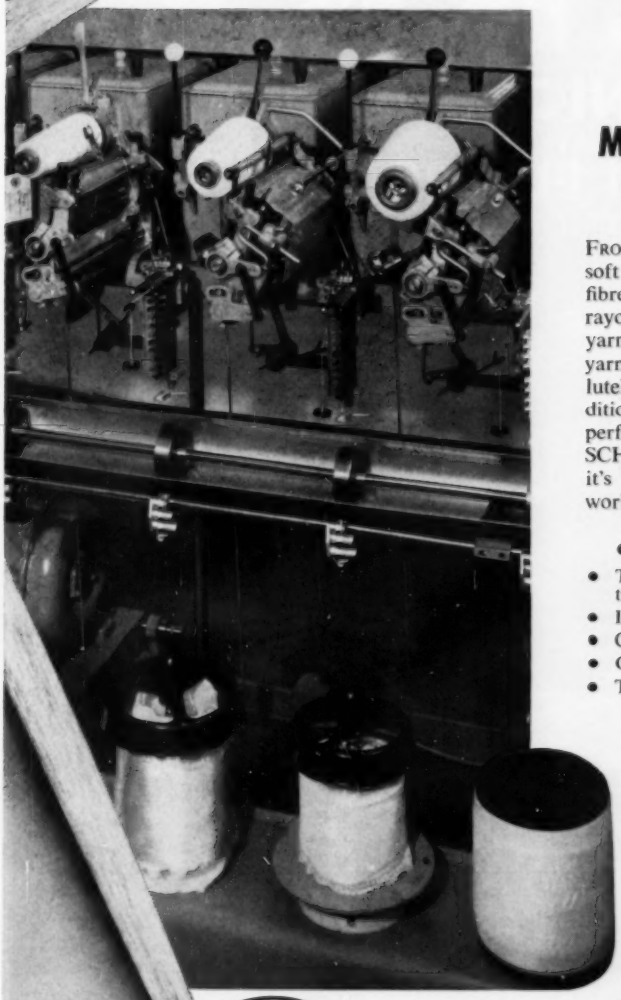
Circle T-39 on Reader Service Card

Steam Generator

A low-price, forced recirculating steam generator featuring a balanced

Schweiter

Working under too much Tension?



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MONOFIL-CONER *(Type KEK-PN)*

PROVIDES PERFECTLY EVEN TENSION FOR YOUR FINEST YARNS!

FROM START TO FINISH . . . you can count on Schweiter's soft touch and even tension for winding your miracle fibres . . . the very fine denier Nylon, Dacron, Orlon, rayon . . . or the rubber-covered yarns, and textured yarns such as Helanca, Banlon, Agilon, Taslan . . . all yarns which require uniform tension! Count on absolutely no stretching with or without lubrication or conditioning! Count on a soft, perfect pineapple cone or a perfectly cylindrical tapered-end cheese! Count on the SCHWEITER MONOFIL-CONER Type KEK-PN . . . it's the only machine of its kind, and it's ready to work for you!

ONLY THE SCHWEITER MONOFIL-CONER KEK-PN has

- The Penta gear to prevent slipping down of the thread layers
- Infinitely variable conditioning or oiling device
- Constant yarn speed or increasing speed
- Compensating tensions
- Tapered soft winding roller

Send for descriptive literature

and for results of winding tests

with your own yarn.

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Sales and Service in the United States and Canada **H. J. Theiler Corporation**
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Every new fiber developed brings to the textile plant both opportunities and problems. New physical characteristics of the fibers usually require changes in processing equipment. Hundreds of variations have been made in Herr Flyers to accommodate the new yarns. Many special Herr Conical Ring and Traveler combinations have been produced. If you have a spinning or twisting problem — Let us help you.

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FOR SPINNING AND TWISTING WORSTED, WOOLEN, RAYON, NYLON, ORLON, FIBERGLASS AND BLENDED YARNS OF ALL TYPES

Many Hands

To Help You Find the Answers to Bleaching Problems

Just a phone call to one of Du Pont's textile specialists can bring you prompt, on-the-spot help with any immediate problem. Specific recommendations are compiled in a special report for your use.

This kind of assistance is just one part of Du Pont's *complete* textile bleaching service which includes: fact-filled, authoritative Technical Bulletins on bleaching operations; Special Modernization Service to help with your expansion plans; Confidential Bleachery Survey to help you maintain or improve bleaching efficiency; and Bulk Storage Systems to help you buy and store peroxide in money-saving quantities.

Du Pont supplies top-quality bleaching agents—ALBONE® hydrogen peroxide, SOLOZONE® sodium peroxide, PERDOX® sodium borate perhydrate and sodium perborate tetrahydrate—for uniform bleaching results.

For full details call the Du Pont district office nearest you.

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GRATON AND KNIGHT
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TEXTILE
LEATHERS
GRATON & KNIGHT Company
WORCESTER, MASSACHUSETTS

feed is being made by Clayton Mfg. Co., El Monte, Calif. While the generator is operating, cold water entering the system is never admitted directly to the coils to reduce the head level of the entire system. Instead, an automatic control admits unheated feed water into the accumulator.

Circle T-40 on Reader-Service Card

Lathe for Duplicate Parts

A turret lathe designed for the efficient production of duplicate parts has been added to the line of lathes made by South Bend Lathe Works, 425 E. Madison St., South Bend 22, Ind. A two-speed motor gives 12 spindle speeds ranging from 20 to 940 rpm. The speed may be changed quickly to save time on multiple operations such as drilling and tapping, boring and reaming, etc.

Circle T-41 on Reader-Service Card

Junction for Conveyor

A live-roller conveyor junction unit has been announced by Rapids-Standard Co., Inc., 342 Rapistan Bldg., Grand Rapids 2, Mich. The function accessory is designed to transfer materials either to or from a live conveyor.

Circle T-42 on Reader-Service Card

Prefabricated Buildings

Prefabricated straight-wall steel buildings featuring inexpensive trussless construction are being manufactured by The Wonder Building Corp. of America, 30 N. LaSalle St., Chicago 2, Ill. The buildings are said to be specifically designed for warehouses and storage areas in the textile industry. Erection costs are 30¢ per sq. ft.; purchase costs are $1.25 per sq. ft. for a building with ends, doors, and all necessary hardware. You need to supply only a concrete slab for the floor.

Circle T-43 on Reader-Service Card

Metal Detector

An electronic inspection machine for detecting metal that will spot metallic specks smaller than a typewriter dot has been developed by Radio Corp. of America, 30 Rockefeller Plaza, New York 20, N. Y. It provides continuous inspection of material traveling at 10 to 1,000 ft. per min.

The unit can be installed to trigger alarm systems, stop the production line, or mark the contaminated area with chalk or dye.

Circle T-44 on Reader-Service Card

DEVELOPMENTS TO WATCH

CONTINUED FROM PAGE 6

TOW-DYED ORLON . . . in bulky yarns will soon be seen in tweed coating.

COTTON FINISHING . . . may have the best year ever in 1956, says the National Assn. of Finishers of Textile Fabrics. A record-breaking 7.8-billion yds. was bleached, dyed, or printed in 1955—7% more than in 1954.

AN ABRASION TESTER . . . that will give the same results in any laboratory may soon be available, reports the American Assn. of Textile Chemists and Colorists. The tester is a modified version of the Accelerator.

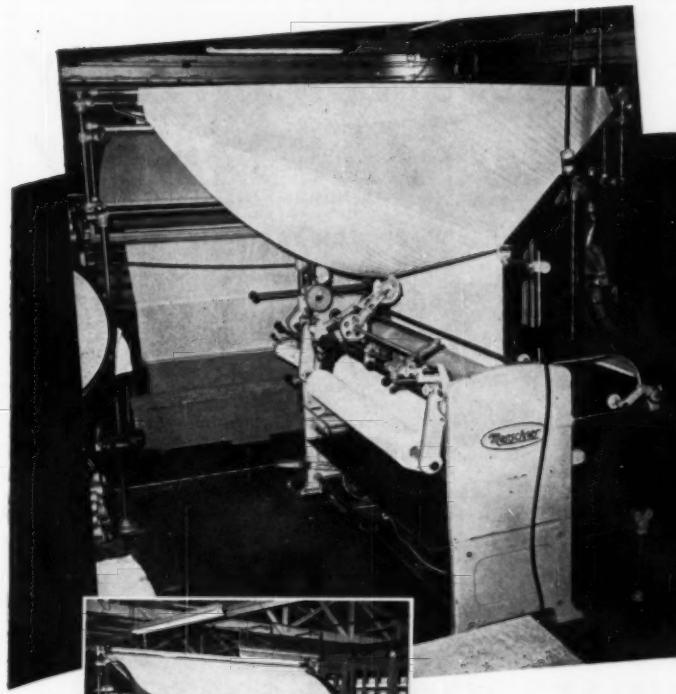
FIRE-RETARDANT ACETATE . . . may soon be available for decorative fabrics if experimental cloth made of Celanese filament yarn proves practicable. The fabrics are now being tested and evaluated.

PERMANENT MOTHPROOFING . . . of wool and permanent creases for men's trousers are in the development stage, according to Dr. Gerald Laxer, science director of the Wool Bureau. He also predicts new shrinkproofing methods and improved dyeing methods for wool.

News Briefs

PRINTED BLANKETS . . . made of Orlon with nylon-satin bindings are now produced by North Star Woolen Mills. A daisy design in pink, blue, or yellow is hand-screen-printed on a white background.

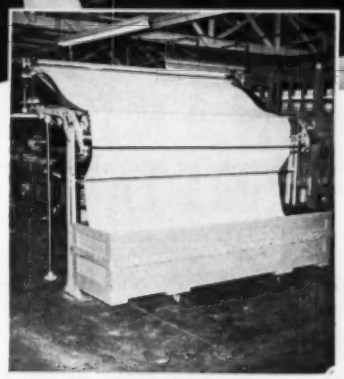
THE 1955 COTTON CROP . . . may total nearly 15-million bales. Over 14.5-million bales were ginned through mid-January, and cotton men estimate that at least another 500,000 bales will be ginned before the final government report is made in May.



New

HIGH-SPEED,

Doubling, Measuring and Rolling Machine



ALSO AVAILABLE is an attachment (Automatic Guider for Self Doubling, Model S.D. IV) which aligns selvages automatically.

added to REINER'S EXPANDING LINE

It is with pride that Reiner offers this efficient, economical producer—ideally suited for both woven or knitted cloth. Available in various widths up to 120" for open goods (finished goods are doubled and rolled to 60" width). Larger widths can be furnished upon request.

SPECIAL FEATURES:

- 3-Speed drive permits large range of speeds for adaptability to various fabrics.
- Goods can be handled from either folded condition, loose scray or from rolls.
- Machine gives unmatched performance and accuracy even at high speeds.
- No experienced help required for operation of unit.
- Machine prints yardage after each run—insuring accuracy, and eliminating chance for error.

Write for complete details and interesting case history regarding actual mill use of this machine.

THE REINER LINE:

Tricot Machines—Simplex (Double Knit) Machines—Raschel Machines—Tulle Machines—All types of Warpers, Beamers and Creels—75 Gauge (4 section) Full-Fashioned Hosiery Machines—Full-Fashioned Sweater Machines—Schaffhouse Flat Power Knitting Machines—Automatic Schiffli Embroidery Machines (10 and 15 yds.)—Multihead Automatic Jacquard Embroidery Machines—Automatic Bobbin Winding Machines (for stitching and quilting)—Jacquard Pattern Repeating Machines—Reiner-Famatex Tenters—Rabo Permanent Pleating Machines—Menschner Gauged, Doubling, Measuring and Rolling Machines—Menschner Cloth Control and Marking Device—Ready Spare Parts Service for all Reiner Machines.

ROBERT REINER INCORPORATED

10 MINUTES FROM TIMES SQUARE

Take Bus Nos. 61 or 67, from Platform No. 60, Port Authority Bus Terminal, 41st Street and 8th Avenue, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . TELEPHONE: UNION 7-0502, 0503, 0504, and 0505. From New York City call LONGACRE 4-6882.

FOUNDED IN 1903 **550-564 GREGORY AVENUE, WEEHAWKEN, NEW JERSEY**

More VERSATILITY
More ADAPTABILITY

when you're knitting with

SYNTHETIC YARNS

Special Leighton Features:

Less Yarn Strain. The big dial eliminates sharp bends—you knit soft spun yarns with less end breakage. Easier on bulk yarns too.

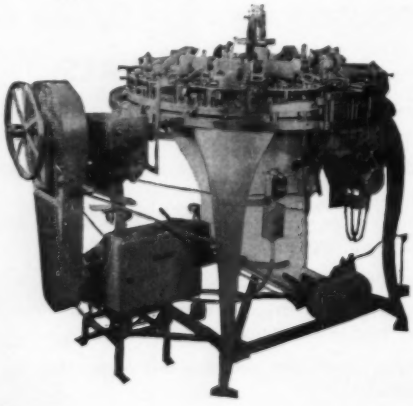
Better Cam Action. Leighton operates horizontal needles from the OUTSIDE DIAL toward the center. The face of the fabric is in full view of the knitter.

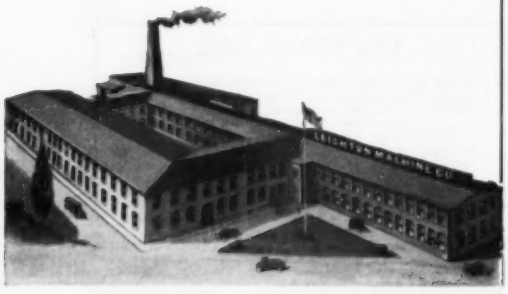
More Flexibility. Leighton needles are spaced to give more room which allows a wide range of yarn sizes to be knit without changing needle cuts.

Leighton Circulars are custom built with multiple feeds, two speed control, two and three color stripes. Two and three needle rack. Brushing attachment to brush as you knit. Firm durable elastic rib trim.

Built Right . . . to Knit Right on all types of yarns.

Twin sweater sets make every season a sweater season and increase your sales

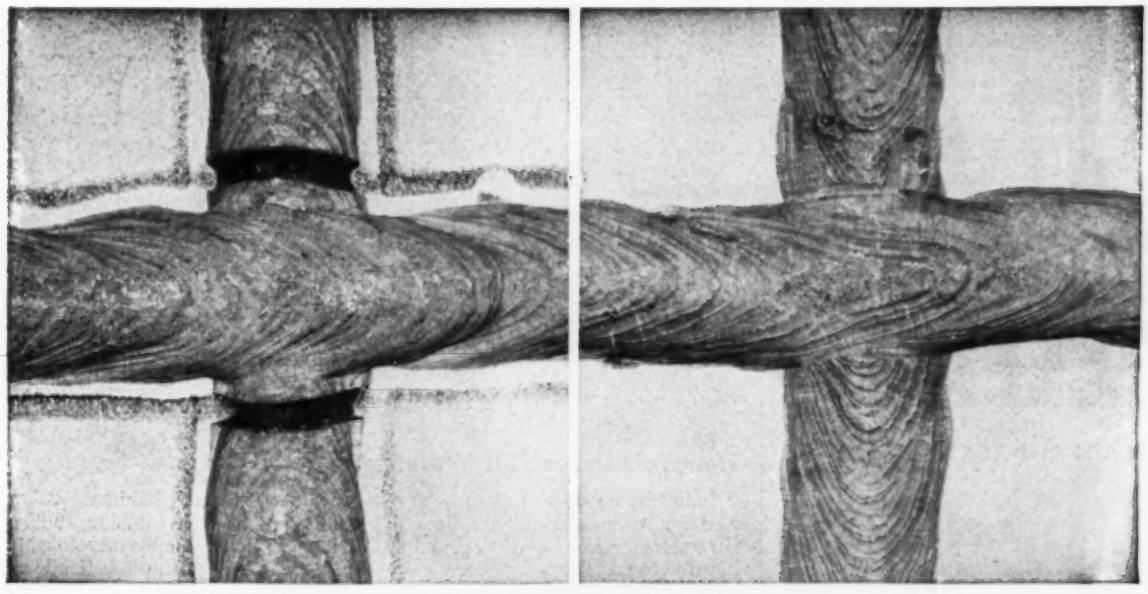




LEIGHTON MACHINE COMPANY

··· MANCHESTER, NEW HAMPSHIRE ···

MFGRS. OF CIRCULAR LATCH NEEDLE KNITTING MACHINES



Two welded samples were tested for three 4-hour periods in a solution of 10% nitric and 3% hydrofluoric acid at 176 F. Specimen at left showing acid attack alongside welds is regular Type 304; specimen at right, free from acid attack, is Armco 18-8 ELC (Type 304L).

PROTECT WELDED STAINLESS EQUIPMENT AT LESS COST WITH ARMCO ELC

You needn't take chances on carbide precipitation adjacent to welds in textile equipment. Armco offers two extra-low carbon (ELC) stainless steel grades that are completely satisfactory for service in welded equipment up to 800 F. They are:

ARMCO 18-8 ELC (TYPE 304L)
ARMCO 18-12 MO ELC (TYPE 316L)

THEY SAVE YOU MONEY

Armco 18-8 ELC costs less than the columbium- or titanium-stabilized Types 347 and 321, yet insures the same freedom from intergranular corrosion in the recommended temperature range as the more expensive types. The Armco ELC types are produced in sheets, strip, plates, bars and wire.

"EXTRA-LOW-CARBON" DOES IT

Armco ELC grades contain a *maximum of only 0.03% carbon.* This small amount of carbon is not enough to cause harmful carbide precipitation adjacent to welds during welding. Therefore, stabilizing elements are not needed, for either shop- or field-welding.

GET COMPLETE INFORMATION

Let us send you a copy of the article, "How to Control Carbide Precipitation in Welding Stainless Steels." This is the latest and one of the most concise articles ever written on the subject. For more information on the ELC grades, get the booklet, "Armco's ELC Stainless Steels." Just check what you want on the coupon and mail it to us.

ARMCO STEEL CORPORATION
4604 Curtis Street, Middletown, Ohio

☐ Send me a copy of the article, "How to Control Carbide Precipitation in Welding Stainless Steels"
☐ Send me a copy of the booklet, "Armco's ELC Stainless Steels"

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STREET_____
CITY_____ ZONE____ STATE_____

ARMCO STEEL CORPORATION

4604 CURTIS STREET, MIDDLETOWN, OHIO

ARMCO®

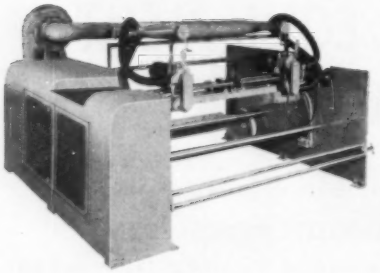
SHEFFIELD STEEL • ARMCO DRAINAGE & METAL PRODUCTS, INC. • THE ARMCO INTERNATIONAL CORPORATION

HERMAS SELVAGE TRIMMER CLEANS

PLAIN AND TEXTURED CLOTHS

at

Low Cost



The new low cost Hermas Selvage Trimmer cleans hanging ends from both selvages of cotton, synthetic woolen and worsted cloths at one pass through the machine. Speed up to 150 yards a minute.

The new Selvage Trimmer cleans textured, terry, and similar cloths as well as dress goods without touching the face or back of the goods.

A loop clipper attachment converts selvage loops to hanging threads for trimming.

The Selvage Trimmer may be combined with scrays, brushing machines, and other equipment.

Send us a piece of your cloth. We will be glad to clean it on the new selvage trimmer to show you the kind of work you can expect. No obligation.

Send today for four page illustrated folder describing and illustrating the new Hermas Selvage Trimmer.

HERMAS
MACHINE COMPANY
229 Royal Avenue
Hawthorne, New Jersey

MILL MAINTENANCE

How To Sample Hot Water

Industrial water must often be sampled for hardness from pipe lines in hot-water service. And the sample must be cooled to approximately room temperature; failure to cool the water will result in flashing and an unsatisfactory sample.

A common type of coil is two concentric tubes, which are coiled to any helical diameter. The cooling water flows through the outside tube, and the hot-water sample flows in the opposite direction through the inner tube.

The sampling of water from boilers, feed-water heaters, or evaporators must also be made under pressure by using a cooling coil. Manufacturers frequently equip pressure vessels with satisfactory sampling outfits.

The continuous blow-down line of a modern boiler is often used. In such instances, it is advisable to locate the sampling outlet between the boiler and the flow control valve of the continuous blow-down to avoid flashing. It is sometimes necessary to check various possible sampling stations on some boilers to locate the most desirable one.

Use Two Stations

At least two sampling stations are required on an ion-exchange unit: one on the outlet to service and the other on the backwash-effluent line. One sample from each station before and after regeneration usually affords satisfactory control. The time for removing these samples must be established by sampling at 1-min. intervals or on a volume-of-water basis near the end of two or three softening cycles and two or three rinsing cycles.

The composition of some waters changes rapidly toward the end of the softening cycle. These waters may require additional sampling to catch the point of maximum tolerable hardness for the particular operation involved. For example, a rayon plant generally demands hardness below 0.08 equivalent per million; but a boiler feed-water supply may tolerate 0.15 equivalent per million hardness for a short period at the end of the ion-exchange softening cycle.

The necessary sampling stations for hot-flow softeners are provided by the manufacturer for both single-stage or two-stage softening. In units that employ a sludge blanket, additional sample outlets are provided for control purposes.

Take Samples Often

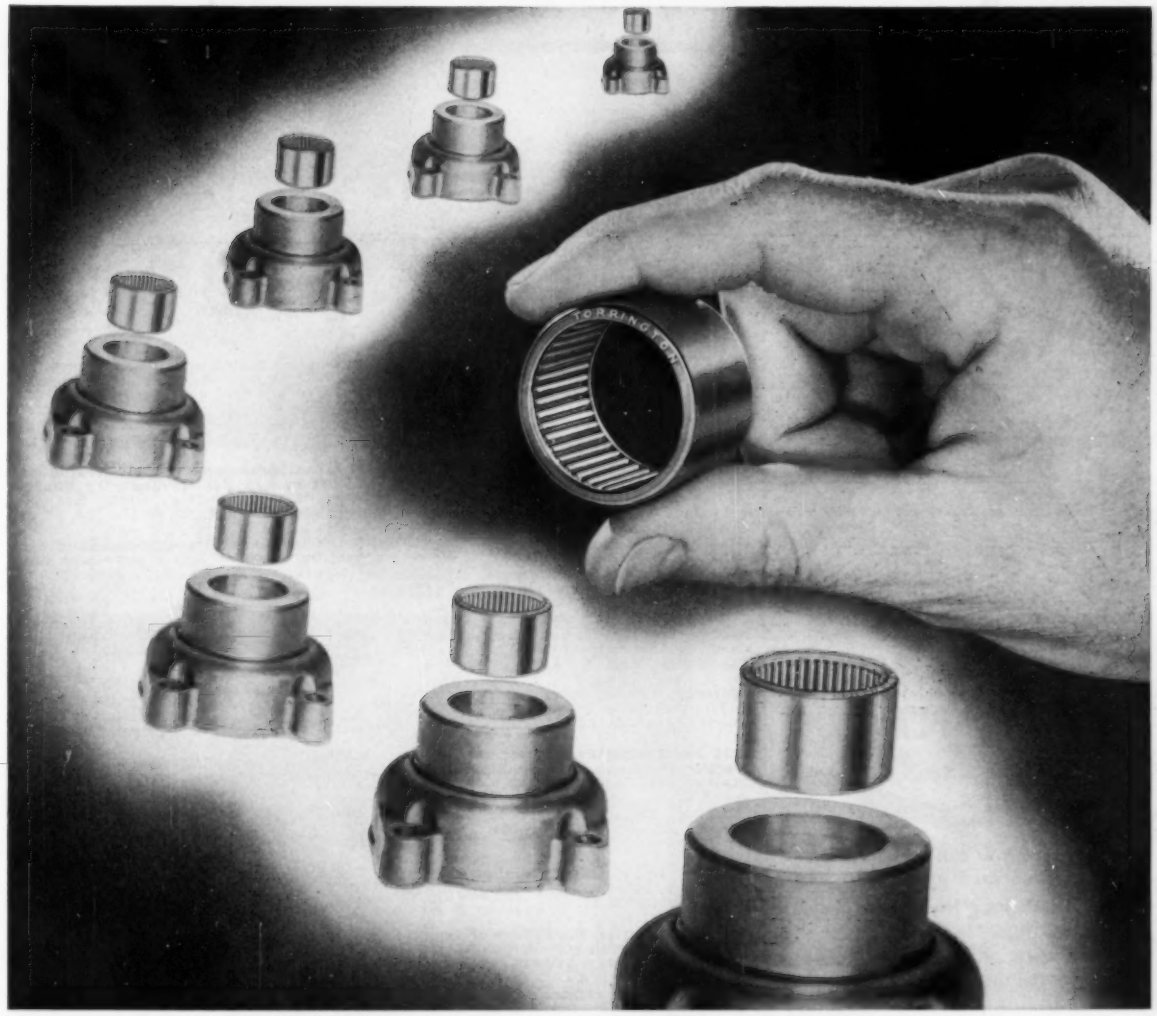
The frequency of samples depends on the variable concentration of calcium, magnesium, and suspended solids. Samples drawn at 8-hr. intervals are usually satisfactory for a water supply of fairly constant composition. But it may be necessary to sample at less than 1-hr. intervals with a water supply that changes rapidly or is especially sensitive.

A satisfactory sample of steam, particularly of steam at high pressure and temperature, is of great importance. In some instances, the single sampling station made available by the manufacturer is inadequate. Then it is necessary to install additional sampling stations.

It is not always possible, because of physical limitations, to obtain the coverage desired.

It is the usual practice today to determine steam quality by measurement of the conductance of its condensate. The ionizable gases should preferably be removed from samples before the conductance measurement. Several degassing devices are used for this purpose.

It is often necessary to sample water at reduced pressures, such as in vacuum-return systems or condenser hot wells. A different physical setup is required here, and extreme precautions against leakage must be taken. *American Society for Testing Materials.*



The **TORRINGTON NEEDLE BEARING** *is a natural for volume installation*

You can install Torrington Needle Bearings with greater rapidity than any other type of anti-friction bearing. Today, automatic arbor presses are widely used throughout industry for large volume installation—possible because of the Needle Bearing's unique unit construction.

Since no collars, shoulders or retaining rings are needed, Needle Bearings require only a simple housing. Consequently, an operator can turn out a tremendous number of assemblies every hour. A surface-hardened shaft serves as the inner race. Ease and speed of installation cut costs on your assembly line—a large production benefit.

For more than twenty years our Engineering Department has helped designers and manufacturers throughout industry to adapt the superior advantages of the Needle Bearing to their products. Let us help you make the Needle Bearing "standard" equipment in yours.

See our new Needle Bearing Catalog in the 1956 Sweet's Product Design File —or write direct for a catalog.

TORRINGTON NEEDLE BEARINGS
Give you these benefits

- low coefficient of starting and running friction
- full complement of rollers
- unequalled radial load capacity
- low unit cost
- long service life
- compactness and light weight
- runs directly on hardened shafts
- permits use of larger and stiffer shafts

THE TORRINGTON COMPANY
Torrington, Conn. • South Bend 21, Ind.
District Offices and Distributors in Principal Cities of United States and Canada

TORRINGTON BEARINGS

Needle • Spherical Roller • Tapered Roller • Cylindrical Roller • Ball • Needle Rollers

Lower Production Costs!

with ROY 3 POINT PLAN

Here's how you can lengthen the life of your card grinders!

1. Install long life internal ball bearings.
2. Apply our special grease compound with a Roy grease gun on your worms and shells.
3. Insert SRS gears for cylinder grinding and SRDX gears for doffer grinding.

That's the proven 3 Point Plan, by B. S. Roy . . . foremost name in *"balanced"* grinders. For further details, contact our Gastonia, N. C. plant office.

"BALANCED" ROY GRINDERS

B. S. ROY & SON COMPANY
Worcester, Mass.

Sales Engineers in the South
Bill Cooper • Leon Frye • Bill Crowder
Southern Office and Plant
Second Ave., Gastonia, N. C.
Telephone Gastonia 4-2126

CALENDAR

April

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., April 4.

American Society for Quality Control, spring meeting, Clemson House, Clemson, S. C., April 5 & 6.

American Cotton Manufacturers Institute, annual meeting, Hollywood Beach Hotel, Hollywood, Fla., April 5 to 7.

AATCC, Piedmont Sect., Sir Walter Hotel, Raleigh, N. C., April 7.

Annual Packaging Conference, American Management Association, Atlantic City, N. J., April 9 to 11.

Alabama Cotton Manufacturers Association, annual convention, Buena Vista Hotel, Biloxi, Miss., April 11 to 13.

National Knitted Outerwear Association, Waldorf-Astoria Hotel, New York, N. Y., April 18 and 19.

Phi Psi Textile Fraternity, annual convention, Alabama Polytechnic Institute, Auburn, Ala., April 19 to 21.

AATCC, Philadelphia Sect., Benjamin Franklin Hotel, Philadelphia, Pa., April 20.

CATCC, Quebec Sect., annual meeting, Sheraton-Mt. Royal Hotel, Montreal, Que., April 20 & 21.

Textile Operating Executives of Georgia, A. French Textile School, Georgia Institute of Technology, Atlanta, Ga., April 21.

Cotton Manufacturers Association of Georgia, annual convention, Emerald Beach Hotel, Nassau, Bahama Islands, British West Indies, April 25 to 28.

AATCC, Northern New England Sect., Lowell Technological Institute, Lowell, Mass., April 27.

AATCC, New York Sect., Kohler's Swiss Chalet, Rochelle Park, N. J., April 27.

National Association of Hosiery Manufacturers, annual convention, Boca Raton Hotel and Club, Boca Raton, Fla., April 28 to May 1.

May

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., May 2.

The Fiber Society, spring meeting, The Clemson House, Clemson, S. C., May 2 and 3.

AATCC, Midwest Sect., Plankington Hotel, Milwaukee, Wis., May 5.

AATCC, New York Sect., Kohler's Swiss Chalet, Rochelle Park, N. J., May 18.

Southeastern International Industrial Exposition, Lakewood Park, Atlanta, Ga., May 18 to 25.

Tufted Textile Manufacturers Association, annual meeting, Cavalier Hotel, Virginia Beach, Va., May 31 to June 2.

South Carolina Textile Mfrs. Assn., The Cloister, Sea Island, Ga., May 31 to June 2.

June

Materials Handling Institute Exposition of 1956, Public Auditorium, Cleveland, Ohio, June 5 to 8.

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., June 6.

National Association of Hosiery Manufacturers and Hosiery Industry Conference, annual meeting, Hotel Roanoke, Roanoke, Va., June 14 to 16.

Southern Textile Association, annual convention, Mayview Manor and Green Park Hotel, Blowing Rock, N. C., June 21 to 23.

July

Gordon Research Conference on Textiles, Colby Junior College, New London, N. H., July 9 to 13.

September

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Sept. 5.

The Fiber Society, fall meeting, Warwick, Hotel, New York, N. Y., Sept. 6 & 7.

AATCC, national convention, Waldorf-Astoria Hotel, New York, N. Y., Sept. 10 to 12.

Combed Yarn Spinners Association, Cavalier Hotel, Virginia Beach, Va., Sept. 27 & 28.

October

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 1 to 5.

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Oct. 3.

AATCC, Piedmont Sect., annual meeting, Charlotte Hotel, Charlotte, N. C., Oct. 6.

North Carolina Textile Manufacturers Association, annual meeting, The Carolina Hotel, Pinehurst, N. C., Oct. 10 to 12.

Textile Operating Executives of Georgia, A. French Textile School, Georgia Institute of Technology, Atlanta, Ga., Oct. 13.

ASTM, Committee D-13, fall meeting, Warwick Hotel, New York, N. Y., Oct. 16 to 19.

International Knitting Machinery & Accessories Exhibition, Granby Halls, Leicester, England, October 17 to 27.

AATCC, Northern New England Sect., Science Park, Boston, Mass., Oct. 19.

November

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Oct. 7.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Nov. 16.

December

AATCC, Northern New England Sect., annual meeting, Hotel Vendome, Boston, Mass., Dec. 1.

AATT, Della Robbia Room, Vanderbilt Hotel, New York, N. Y., Dec. 5.

TECHNICAL BULLETIN ON *UVERSOFT* "D"

Send me technical information on Harshaw Uversoft "D"

My Name_____

Company Name_____

Street Address_____

City_____ Zone____ State_____

yours for the asking

Imparts Soft Hand With Little Reduction In Moisture Absorbency

UVERSOFT "D" is a cationic surface active agent which produces a full, soft hand with little, if any, reduction in moisture absorbency of the TREATED material. It can be exhausted from a long bath, and has an excellent retention in an aqueous system. UVERSOFT "D" provides a maximum economy in application and use.

UVERSOFT "D" is an outstanding anti-static agent. It should be considered for situations where the accompanying softening action is not objectionable.

Send for folder containing complete technical information.

THE HARSHAW CHEMICAL CO.

1945 EAST 97th ST., CLEVELAND 6, OHIO

New Bahnson Collecto-Vac increases production efficiency at Aleo Manufacturing Company

Bahnson Collecto-Vac installed on frames in Spinning Room at Aleo Manufacturing Co., Rockingham, N.C.

New automatic broken-end collection unit

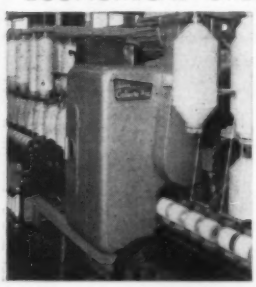
- helps increase spinner efficiency
- improves product quality
- simplifies plant maintenance

Here are important features of the Bahnson Collecto-Vac which make it outstanding for economy and dependable performance:

ANODIZED ALUMINUM FLUTES eliminate flute warpage and minimize static build-up.

HIGH SUCTION EFFICIENCY-Specially engineered main duct distributes maximum pressure throughout system utilizing Bahnson-designed fan for high air handling effectiveness.

ECONOMICAL OPERATING COST-Bahnson designed fan requires less power to maintain even vacuum pressure, and the special construction of the airtight duct and flute connecting tubes makes for more efficient performance.



Left: Double Collecto-Vac collection box serving two frames.

Bahnson COMPANY
WINSTON-SALEM, N. C.

WRITE US TODAY for detailed information on the new Bahnson Collecto-Vac

AIR CONDITIONING • CLEANING • VACUUM COLLECTION

226 For more information, write direct or use Reader-Service post card.

NEWS about SUPPLIERS

ALCO OIL & CHEMICAL CORP., Philadelphia, Pa.–Has been purchased by a group of Cleveland investors and management specialists. . . . **ARNOLD, HOFFMAN & CO., INC.**, Providence, R. I.–Has consolidated its New England sales territory with the Teterboro, N. J., sales territory. Headquarters for the Northern territory will be at 370 North St., Teterboro. . . . **ALLIED CHEMICAL & DYE CORP., NITROGEN DIV.**, New York, N. Y.–Will install facilities for the production of solid ammonium nitrate 33½% N. in its Hopewell, Va., plant. . . . **ASHWORTH BROTHERS, INC.**, Fall River, Mass.–Has opened a card-clothing factory and repair shop at 114 Sinnott Rd., Scarborough, Ont., Canada. . . . **AUSTRALIAN RESEARCH SERVICES LTD.**, Sydney, Australia–Has opened offices at 420 Lexington Ave., New York, N. Y.

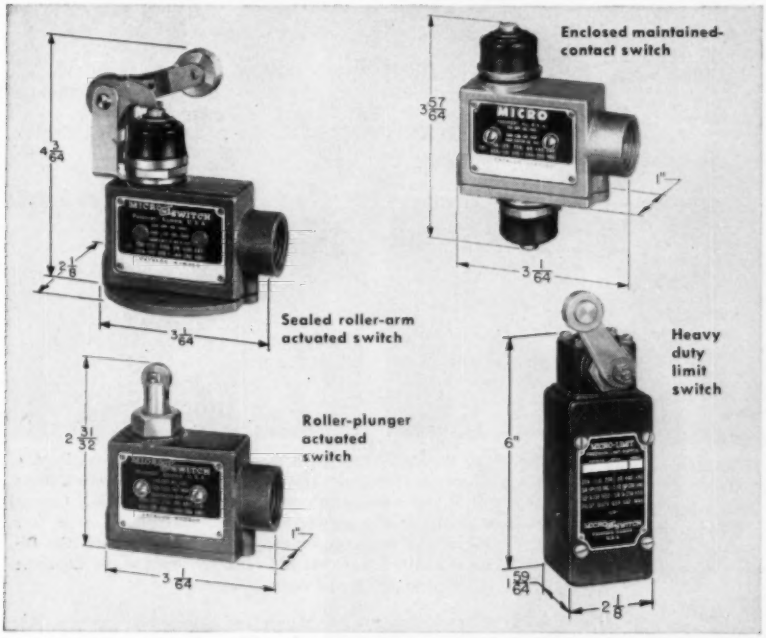
LOUIS P. BATSON CO., Greenville, S. C.–Has named Lee C. Shook to its sales staff. . . . **CELANESE CORP. OF AMERICA**, New York, N. Y.–Has named R. P. Wilson special assistant to W. D. Clark, general sales manager of the Textile Div., Charlotte, N. C. J. Guyton Boston has been named assistant director of marketing for the Textile Div., with headquarters in New York. . . . **CHEMSTRAND CORP.**, New York, N. Y.–Has named William P. Tukey to the Acrilan sales staff. . . . **CLARK EQUIPMENT CO.**, Battle Creek, Mich.–Has opened a new materials-handling development center to develop materials-handling methods for individual industries. . . . **LLOYD B. COGSWELL MFG. CO.**, Springfield, Mass.–Has established an industrial-roll division that will be known as the Atlas Industrial Roll Div. James R. Sisson has been named general manager and sales engineer.

COLUMBIA-SOUTHERN CHEMICAL CORP., Pittsburgh, Pa.–Has established a new district sales office at Houston, Texas. C. K. Ballard has been appointed district sales manager. . . . **CONCORD CHEMICAL CO.**, Camden, N. J.–Has purchased Standard Soap Co. of Camden. Concord has moved its offices from Moorestown to Camden. . . . **DIAMOND ALKALI CO.**,

CIBA CO., INC., New York, N. Y., has opened this new depot at 534 Permalume Place, N. W., Atlanta, Ga.

MICRO *precision switches*

...THEIR USE IS A PRINCIPLE OF GOOD DESIGN



These MICRO precision switches make textile operations safer—more productive

Whether you are a manufacturer of textile equipment or a plant operating man it will pay you to know ALL about MICRO precision switches.

The switches shown here were selected by plant engineers to make the operations shown at the right safer, more automatic and more productive. They are but a few of the many MICRO precision switch types now in use in hundreds of textile plants.

Sealed Roller-Arm Actuated Switch: For use with mechanically operated cams or slides. Elastomer boot protects the switching unit against effect of liquids, dust or other foreign substances. Roller arm is field adjustable through 360 degrees horizontally and 225 degrees vertically.

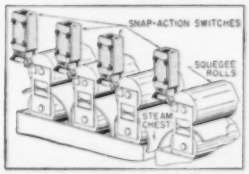
Enclosed Maintained-Contact Switch: For applications which require sustained contact after the actuating force has been released. A reset plunger enables the switch to be reset for succeeding operations. Elastomer boot prevents entrance of dust or moisture through the actuating mechanisms.

Roller-Plunger Actuated Switch: Designed for operation by cams or slides whose approach is in the same direction as the longitudinal axis of the switch. Rugged overtravel mechanism insures accurate repeat ability of the enclosed switching unit even when subjected to continual impact.

Heavy Duty Limit Switch: Ruggedly housed to withstand high humidity and linty atmospheres of textile operations. Roller arm actuator is field adjustable through 360 degrees at intervals of 0.4 degrees to any of 870 positive lock positions.

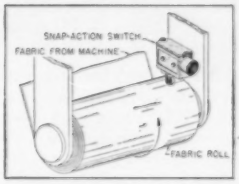
For complete information on switches for textile equipment write for the name of the distributor nearest you. MICRO SWITCH field engineering is available at your nearest branch office.

Saves Fabric and Production Loss on Bleach Range



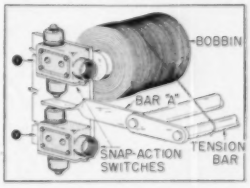
MICRO heavy duty limit switches are installed on bearing which raises—with roll. As cloth raises the switch stops the range, preventing fabric and production losses.

Controls Roll Size on Circular Knitting Machine



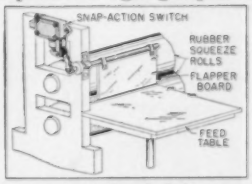
Roller-plunger actuated switch is operated by the roll when the fabric being made or processed reaches the desired roll size. Switch then stops the machine automatically.

Keeps Proper Yarn Tension for Knitting Operation



Two enclosed maintained-contact switches are used to prevent breakage of yarn due to either too high or too low tension. In either case Bar A contacts one switch or the other and shuts off the machine.

Protects Operator's Hand in Carpet Wringing Operation



Roller-arm actuated switch is operated by cam to shut off rolls in case baffleboard is pushed forward enough to catch operator's hand in the rolls. Carpet is positioned in the nip of the rolls by hand but machine will not operate until hands are withdrawn.

SEND FOR CATALOG 83
For information on a wide variety of enclosed switches.

MICRO SWITCH

A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

In Canada, Leaside, Toronto 17, Ontario • FREEPORT, ILLINOIS

Cleveland, Ohio—Has named L. J. Polite, Jr., product sales manager for the Chlorinated Products Div. . . . **DIXON CORP.**, Bristol, R. I.—Has named Robert R. Miller president. William R. Potter has been named vice president and John A. Crowe has been named sales manager. . . . **DRAPER CORP.**, Hopedale, Mass.—Has purchased the Penfield Saw Works, Inc., Thomaston, Conn.

EASTMAN CHEMICAL PRODUCTS, INC., Kingsport, Tenn.—Has elected William S. Vaughn president and a director.

W. T. MEINERT (left) has been named director of development and service for Emery Industries, Inc., Cincinnati, Ohio. CHARLES W. WEYMOUTH (center) has been named a service engineer at the Roberts Co., Sanford, N. C. ROBERT E. SULLIVAN (right) has been appointed supervisor of the newly established sales department for commercial heating boilers at the Cleaver-Brooks Co., Milwaukee, Wis.

. . . **FLETCHER WORKS**, Philadelphia, Pa.—Has been sold to Edward T. Taws. Mr. Taws has assumed active management of the company. . . . **GEIGY DYESTUFFS, DIV. OF GEIGY CHEMICAL CORP.**, New York, N. Y.—Has named W. F. Charlton to head this division. E. W. Birdsall has been named New England manager. . . . **GOODYEAR TIRE & RUBBER CO.**, Akron, Ohio—Has named R. B. Warren sales manager of the Industrial Products Div. J. W. Smith has been named Eastern sales manager for the division. . . . **E. F. HOUGHTON & CO.**, Philadelphia, Pa.—Has elected Frank Ross to the board.

INDEPENDENT CHEMICAL CORP., Brooklyn, N. Y.—Has been appointed a distributor of the Pako 50T Hydromixer manufactured by Pako Corp., Minneapolis, Minn. . . . **JACQUARD KNITTING MACHINE CO., INC.**, Philadelphia, Pa.—Has named Joseph Olachea to the sales staff. . . . **JOHNSON SERVICE CORP.**, Milwaukee, Wis.—Has named John H. Colby to the newly created position of general sales manager. . . . **WILLIAM KENYON & SONS (AMERICA) LTD.**, Perth Amboy, N. J.—Has named J. W. Davis, Columbus, Ga., as Southern representative. . . . **LEIGHTON MACHINE CO.**, Manchester, N. H.—Has named Frank C. Golden president.

RAYMOND W. JACOBY (left), is serving on the staff of the Dept. of Textile Chemistry, School of Textiles, North Carolina State College, Raleigh, N. C., for a two-month period. HAROLD L. HANSEN (center) has been elected a vice president of Sterling Drug, Inc., New York, N. Y. He will be in charge of the Hilton-Davis Chemical Co. Div. J. HILLMAN ZAHN (right) has retired as manager of the Charlotte, N. C., office of H. W. Butterworth & Sons Co.

Crompton Solves A Dilemma

When the break-even point gets higher you must do more business. This means additional capital to finance more volume. Where will it come from? Borrow? Take in a partner? Sell stock?

Why not investigate Crompton Factoring? Immediate and continuous cash for your receivables materially increases the *productivity* of your capital by keeping it on the move . . . by cutting down the lag between billing and payment to a day or two.

Incidentally, when you're Factored by Crompton you are still the boss of your business; we assume all credit risks; and we relieve you of the cost and chores of collection.

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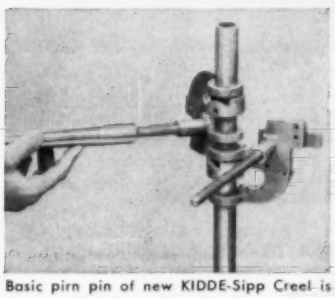
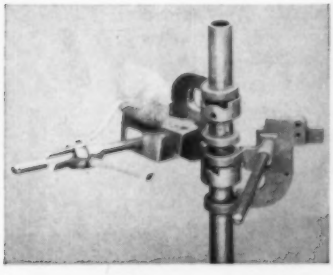
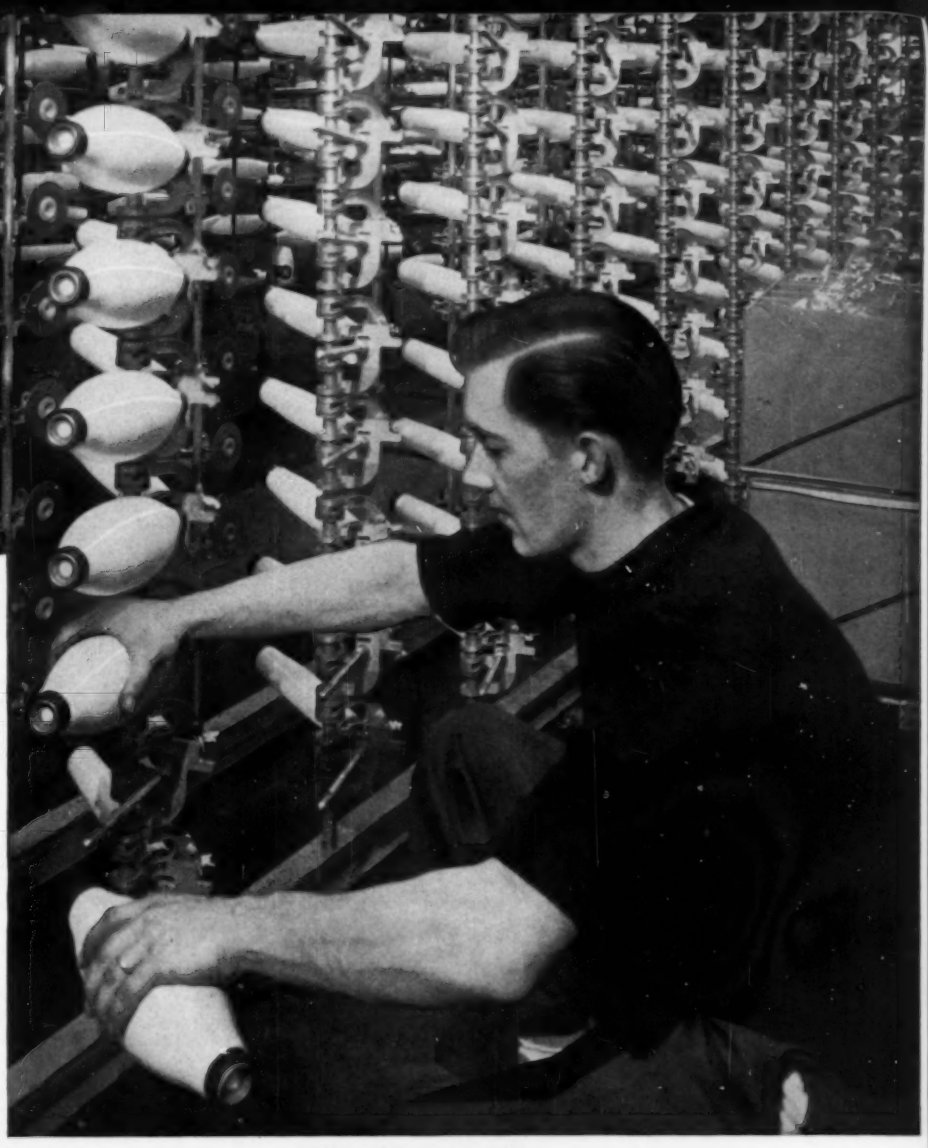


Basic pirn pin of new KIDDE-Sipp Creel is for use with duPont pirns. Aluminum adapter for Chemstrand pirns fits over basic pin, screws firmly into place with a half-turn. Below: two-piece cone adapter can be snapped into place in a matter of seconds.





Starting Point for Good Warps

NEW, IMPROVED KIDDE-SIPP CREEL

To help you make better warps . . . and to make your warping more versatile, KIDDE-Sipp creels have been completely redesigned. Package holder arms are much stronger. Adapters are more rigid. Even the heaviest packages will not sag out of alignment.

Basic creels are fitted with pirn holders for the 12" duPont pirn. Adapters for Chemstrand pirns, or for cones, spools and tubes can be added and fastened securely. Change-overs are easy and quick.

The new creels have plated pins with aluminum arms and adapters. Painting is eliminated . . . no rust can get on your yarn.

KIDDE-Sipp creels are available with inside, outside or vertical yarn delivery . . . with washer, post, or pulley tensions and with Kidde tension compensators. All are available with stop motions and with annunciator lights if desired. Write for further information to . . .

Kidde

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS
BEAMERS • CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS

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HARRY MILLER CORP., Philadelphia, Pa.—Is the new name of the firm formerly known as Hass Miller Corp. . . . **MINNEAPOLIS-HONEYWELL REGULATOR CO.**, Minneapolis, Minn.—Has named Vince Tassi industrial manager in Hartford, Conn. Lyle Russell has been named industrial manager in Chicago, Ill. . . . **CHAS. PFIZER & CO., INC.**, New York, N. Y.—Has promoted J. Philip Smith to general manager of the Chemical Sales Div. . . . **TRUMETER CO.**, New York,

JOHN H. COLLAMORE, JR., (left) has been appointed to the Rhode Island sales territory of Fairbanks Co., New York, N. Y. STUART L. SPERBER (center) has been named director of sales promotion for Metro-Atlantic, Inc., New York, N. Y. JOSEPH C. KING (right) has been named technical director of the Southern Div. of Metro-Atlantic, Inc.

N. Y.—Has appointed Ingalls Engineering Co., Inc., Providence, R. I., as sales representatives in New England. . . . **UNION CARBIDE & CARBON CORP.**, New York, N. Y.—Has appointed H. E. Klein and G. A. Tirgaux to the position of product managers in the company's Fine Chemicals Dept. . . . **UNIVERSAL WINDING CO.**, Providence, R. I.—Has named Robert S. Pennock vice president in charge of domestic sales, succeeding Winthrop S. Warren, retired. . . . **WEAVINGS CORP.**, New York, N. Y.—Has been appointed national sales agents for the Belting Div., Russell Mfg. Co., Middletown, Conn. . . . **WESTVACO MINERAL PRODUCTS DIV., FOOD MACHINERY & CHEMICAL CORP.**, New York,

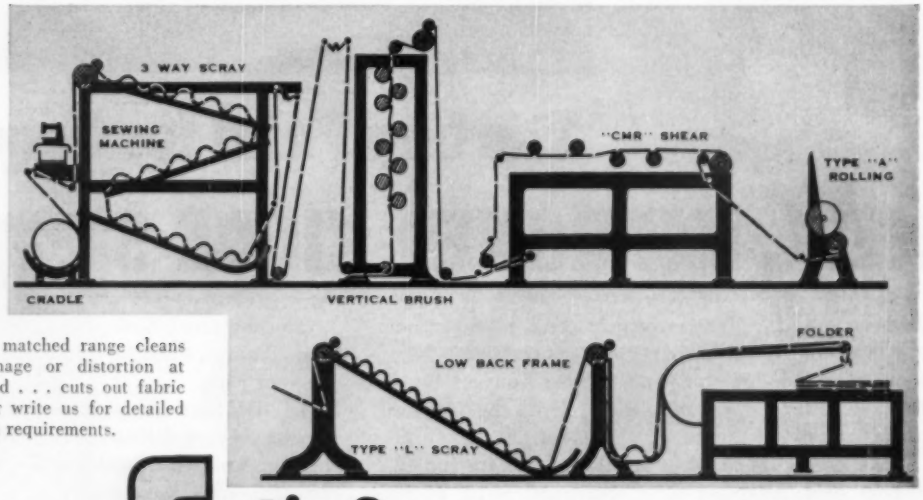
GEORGE W. PARKINSON (left) has been named sales representative in South Carolina for Product Sales, Inc., Whitman, Mass. KENNETH S. HUNT (center) has been appointed sales representative for the Southern territory of the Metlon Corp., New York, N. Y. F. STANLEY HALLETT (right) has been named assistant to the vice president of sales at Curtis & Marble Machine Co., Worcester, Mass.

N. Y.—Has named Raymond C. Tower product manager of phosphates sales and John M. Richard product manager for chlorine and alkali sales. . . . **WILDMAN MFG. CO.**, Norristown, Pa.—Has been purchased by Draper Corp.

END YOUR CLOTH ROOM FINISHING PROBLEMS

WITH THIS ONE PACKAGE PLAN!

THIS new C & M completely synchronized *Large Economy Package* for one man operation gives you *more* for your equipment and labor dollar. Sewing Machine, Scray, Brusher, Shear and Rolling Heads are individually tailored by C & M engineers for your own grey goods mill. At "less than unit" initial cost, this perfectly matched range cleans your fabrics without damage or distortion at maximum operational speed . . . cuts out fabric waste. Plan now to call or write us for detailed information to fit your own requirements.



1831-1956 Serving the Textile Industry for 125 Years

Curtis & Marble MACHINE CO., WORCESTER, MASS.

☆ Southern Sales and Service ☆ South Carolina National Bank Building, Greenville, S. C.

Material: Activator solution—water with 5% ferro-sulphate. **Problem:** Short service life of turbine pumps; sometimes only two weeks. **Solution:** First Moyno ran 6 months without a breakdown. Using relief valves, pressure is kept at constant 120 p.s.i. Now using 7 Moynos because of this exceptional service.	**Material:** Anti-scale boiler treatment. (Alcohols, oils, anti-foam agents, sludge conditioners.) **Problem:** Frequent pump breakdowns caused by back pressure of spray nozzles; and abrasion. **Solution:** Moyno pumps cut pumping time from 20 minutes to 3, reduced down-time, increased production 200%!	**Material:** Caustic solution—for use in mercerizing machines. **Problem:** Rotary pumps wore quickly; lost capacity, and did not have enough suction. **Solution:** Moyno pumps cut maintenance and repairs to minimum—had ample suction for drawing caustic through the cloth.
Material: 40° copperas crystals in 20% sulphuric acid. **Problem:** Low production of diaphragm pump. **Solution:** Moyno pump handles an increased percentage of solids, which in turn increases production.	**Material:** Calcium carbonate slurry. **Problem:** Continuous failures of centrifugal pumps. **Solution:** Moyno pump still giving perfect service after 1½ years. Service is practically continuous—with pump in operation 24 hours per day.	**Material:** Size—containing china clay and latex. **Problem:** Centrifugals unable to handle viscosity—causing frequent trouble. **Solution:** Moyno pump has been on duty for a year. Pump trouble completely eliminated; no repairs required.

Six Chemicals-Handling Problems... Solved by the MOYNO® PUMP!

Features of the MOYNO that may solve YOUR pumping problem

Positive Displacement—Moynos are available to pull up to 29" vacuum while discharging under pressure. Big Moynos deliver up to 250 g.p.m. at pressures to 600 p.s.i.

Gentle—No churning; won't break up semi-solids; won't aerate liquids.

Reversible—The Moyno pumps with equal efficiency in either direction.

Versatile—handles liquids, abrasive slurries, pastes—even potato salad! Rotor and stator are available in stainless steel, other alloys or plastics to meet a wide variety of applications.

Trouble-Free—self priming; won't cavitate or vapor-lock. Just one moving part—no valves to stick, no pistons to gum up. Built for tough service. Easy to maintain.

Looking for a pump with a fast-growing reputation for solving tough pumping problems? Then take a look at the simple, versatile Moyno!

Briefly described above are a few of the many successful case histories proving how Moynos handle jobs where other pumps fail. Why is the Moyno a "problem-solving" pump? For one thing, because it differs completely from conventional pumps . . . rotary, centrifugal or piston. Just one rugged moving part—a rotor turning within a stator—does the job.

The list of chemicals handled by Moynos gets longer every day. If *you* have a pumping problem, such as handling abrasive slurries, mild acids, caustics—watery, viscous or even semi-solid—find out if the Moyno can help you! Use the coupon below for prompt, complete information.

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Gentlemen: Please mail free copy of Bulletin 30-B containing details on construction and operation of Moyno Pumps:

*Name*_____ *Title*_____

*Company*_____

*Address*_____

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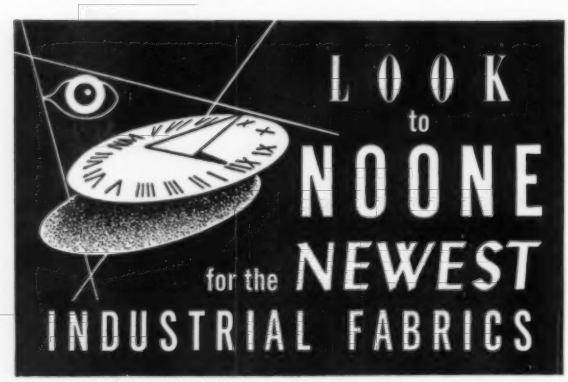

✓ **SLASHER CLOTH** — well-cushioned body assures better slashing of yarn . . . greater resistance to abrasion. High tensile strength. New chemically treated cloth lasts longer . . . provides top quality warp dressing.

✓ **CLEARER CLOTH** — firm, dense nap; all wool or cotton back; highest quality—yet low in price.

✓ **LAPPING CLOTH** — newly developed cotton warp gives greater strength, less stretch; either all wool, or part synthetic filling.

✓ **PRESSURE ROLL FELT** — long service life . . . lasting resilient cushion. All wool. Supplied from stock, cut to required width.

✓ **OTHER SPECIALTY WOVEN FABRICS** — developed at your request.

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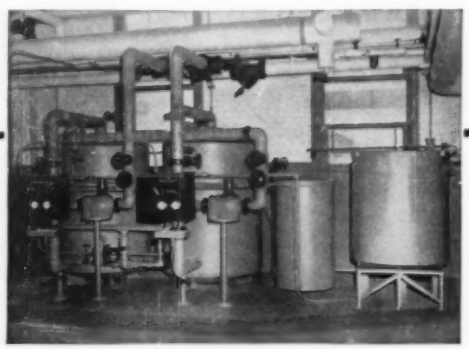
F. C. HUYCK & SONS
Peterborough, New Hampshire
The oldest manufacturer of woven industrial fabrics in America

KENWOOD TEXTILE PRODUCTS



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Producing
CLEAR-IRON FREE 100% SOFT WATER
Often For As Little As
1¢ per 1000 Gallons

Troubled with harshness, poor finish, uneven shades, redyes, seconds, and other product difficulties—?? The secret of uniformity may lie in your water supply. May we check it for you?

HUNGERFORD & TERRY, INC.
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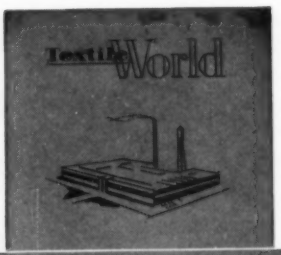


NEWS about MILLS

COTTON MILLS

Bates Mfg. Co., Hill Div., Lewiston, Me., has installed 12 new Saco-Lowell spinning frames.

Cabin Crafts, Inc., Dalton, Ga., and **West Point Mfg. Co.,** West Point, Ga., have joined with William Baird & Co. Ltd., Glasgow, Scotland, to establish a new company at Horwich Junction, Lancashire, England. The new firm will be known as Rivington Carpets Ltd. Machinery is now being installed in the plant. Production will start around the middle of the year.

Dacotah Cotton Mills, Inc., Lexington, N. C., has placed an order with Whitin Machine Works for 24 Superflex spinning frames for warp yarns and change-overs for 20 filling frames. The purchase is part of a $300,000 modernization program. Completion is expected in August.

Derry Damask Mills, Inc., Gaffney, S. C., is replacing 40 jacquard looms and installing eight additional looms. The new machinery is part of a $250,000 modernization program.

Erwin Mills, Inc., Durham, N. C., has completed a 6,231-sq.-ft. addition to the dyehouse.

Equinox Mill, Anderson, S. C., has purchased 10 Whitin Superflex spinning frames. The frames will be equipped with Pneumafil, Unitrol suspension and weighting arrangement with Whitin antifriction top rolls, and nonlubricated top middle and back rolls.

Greenwood Mills, Inc., Greenwood, S. C., will move its New York office to the new building that will be built at 111 W. 40th St.

Highland Park Mfg. Co., Rock Hill, S. C., is installing 120 Draper looms in Plant No. 3.

Johnston Mfg. Co., Charlotte, N. C., has installed Pneumafil central air systems on its spinning frames as part of a modernization program. Pneumastop equipment has been installed on the entire roving operation as part of the card-room modernization.

Kendall Cotton Mills, Pelzer, Plant, Pelzer, S. C., will modernize its spinning frames at a cost of $200,000. A vacuum waste-collecting system, traveling cleaners, and revolving top cleaners will be installed as part of the program.

Newberry Mills, Newberry, S. C., has ordered 13,000 spindles of Rieter cotton ring spinning frames, Model G3.

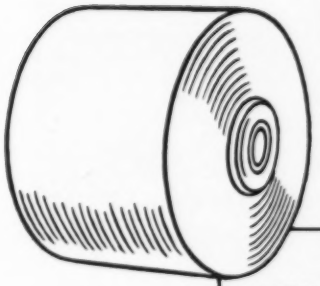
Robinson Mills, Inc., Gastonia, N. C., is discontinuing its hosiery operations. The yarn mill will continue to operate at full capacity.

Spartan Mills, Beaumont Plant, Spartanburg, S. C., is building two humidification rooms. The cost will be $30,000.

Woodside Mills, Greenville, S. C., has started a $750,000 modernization program at the Greenville and Haynsworth plants. A new warehouse is being built at Haynsworth. At Greenville the boilers have been replaced. Other changes at Greenville are: Axi-feed and Axi-flow equipment is being installed in the opening

LARGE PACKAGES HAVE ADVANTAGES

in the steps which FOLLOW THE SPINNING

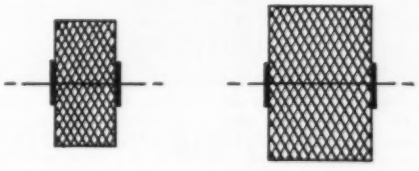


SPINNING

12" Bobbin — 3" Ring — 12 oz. Bobbin
= 1.33 Bob/lb. — 15,000 Yds.
9" Bobbin — 2" Ring — 3.85 oz. Bobbin
= 4.16 Bob/lb. — 5,000 Yds.

3 TIMES As Much Yardage On Bobbin

SPOOLING

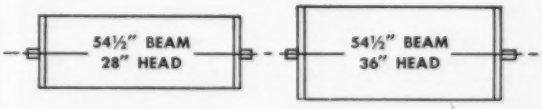


TYPE "C" CHEESE	TYPE "D" CHEESE
2.38 LBS.	6.00 LBS.
48,000 YDS.	120,000 YDS.

2.5 TIMES

AS MUCH YARDAGE PER CHEESE

WARPING



28" BEAM	36" BEAM	40" BEAM
530 LBS.	875 LBS.	1,050 LBS.
24,000 YDS.	40,000 YDS.	40,000 YDS.
445 ENDS	441 ENDS	529 ENDS
BEAMS PER CHEESE	BEAMS PER CHEESE	BEAMS PER CHEESE
TYPE "C"-2 TYPE "D"-5	TYPE "C"-1 TYPE "D"-3	TYPE "C"-1 TYPE "D"-3

SLASHING

Assuming 1,200 yds. per Loom Beam

28" BEAM	36" BEAM	40" BEAM
20 Loom Beams Per Set	33 Loom Beams Per Set	39 Loom Beams Per Set
Average Slasher Creelings per 120-hr. Week		
5.68	3.67	3.16

TWISTING

2.38 LB. CHEESE	6.00 LB. CHEESE
48,000 YDS. PER CHEESE	120,000 YDS. PER CHEESE

2.5 TIMES
AS MANY BOBBINS CAN BE TWISTED
PER CREELING

Note: 24s Yarn Assumed in All Comparisons

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

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ROCKFORD • ILLINOIS • U. S. A.

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You should! *Because* your Staley Textile Representative is an expert technician in *your* field. He understands your problems . . . and he has the know-how to help you solve them. Why not put him to work for you on profit-stealing problems right now? There is no charge for his services, of course . . . it's his job to help you. Call him at the Staley office in your area.

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NEW, FREE Handbook

brings you up to date on the latest developments in mill-wide cleaning—tells you how to save time and money on scouring and kier-boiling operations; maintaining equipment, machinery, humidifiers, power plants; paint stripping and rust removal. Mail the coupon for your copy—today!

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SPECIALIZED INDUSTRIAL CLEANING
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MATERIALS • METHODS • SERVICE

Technical Service Representatives in Principal Cities of U. S. and Canada

room; 50 Mason cards will be installed; new creels are being installed on all warp and filling frames. Whitin High-Draft and Saco-Lowell dual draft will be installed. Pneumafil will be added to all of the filling frames.

WOOLEN AND WORSTED MILLS

Arel Mills, Inc., Monroe, N. C., is building an addition to its mill in which 64 additional looms will be installed. Production will be increased about 50%.

Cleveland Worsted Mills, Cleveland, Ohio, has been liquidated by a vote of the shareholders.

Excelsior Mills, Union, S. S., and **McCormick Spinning Mills**, McCormick, S. C., have merged. They will be known in the future as Excelsior Mills, Inc.

SYNTHETICS MILLS

Burkyarns, Inc., Valdese, N. C., has completed an addition to the dyehouse that will increase production 50%. The cost was $100,000.

Burlington Industries, Inc., New York, N. Y., has purchased Hess, Goldsmith & Co., Inc., New York. Hess, Goldsmith will continue to operate as a separate company with no change in personnel or policies.

Doric Textile Mills Ltd., St. Johns, Que., will build an addition that will double the size of its mill.

Farmac Mills, Inc., Red River, S. C., has installed new equipment as part of a continuing modernization plan.

Laurens Mills, Laurens, S. C., will install 40,000 spindles. The cost will be $1,500,000.

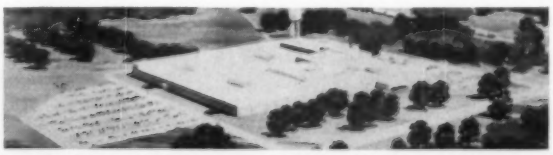
KNITTING MILLS

Austin Hosiery Mills, Albemarle, N. C., will build an addition to its plant that will be used to make women's full-fashioned sweaters. The company has changed its name to Austin Knitting Mills, Inc.

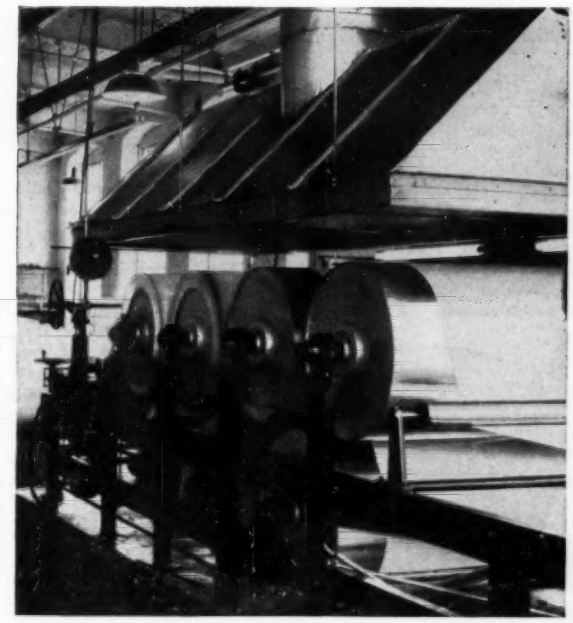
William Carter Co., Needham Heights, Mass., has started production in its new Thomaston, Ga., mill. The company has also completed a 100,000-sq.-ft. addition to its Needham plant. The three-story brick building has increased shipping, warehousing, and boxing facilities 70%.

Cooper's Inc., Kenosha, Wis., is building a new plant in Belzoni, Miss., at a cost of $750,000. Completion is expected in the spring.

Coralee Fabrics, a division



AMEROTRON CORP., Barnwell, S. C., recently started operations in this new $10-million plant. The 430,000-sq.-ft. plant has been equipped with all new machinery, including Proctor & Schwartz blending equipment and Whitin carding and spinning machinery. Marion W. Beacham is the operating head of the plant. Lockwood Greene Engineers, Inc., was the engineer and Daniel Construction Co., Inc., was the contractor.



DOUBLE YOUR DRYER OUTPUT WITH NEW G-E QUARTZ INFRARED LAMP

IT is now possible to double your dryer production with only ⅓ extra investment in equipment. The extremely high heat concentration possible with new General Electric quartz infrared lamps enables you to run dryers at higher speeds and still get adequate drying. Where drying is your bottleneck you can increase the output of your entire plant.

THE G-E QUARTZ INFRARED LAMP gives you fast, positive, and simplified control. In many cases you can eliminate the mechanical safety devices needed to rotate the reflector when the web stops. That's because the output of the lamp drops 80% in only 2 seconds when turned off! And it heats up just as fast. The radiant energy output of the G-E quartz infrared lamp (that's the energy that works for you) is 85% of input. This high radiating efficiency is possible because of the high operating temperature of the lamp filament—over 4000°F!

YOU CAN USE G-E quartz infrared lamps to increase your output and improve quality either in conjunction with your steam cans or to replace steam heat altogether. For more information on how you can use G-E quartz infrared lamps to improve and increase *your* production, write: Large Lamp Dept., TW-4, General Electric Company, Nela Park, Cleveland 12, Ohio.

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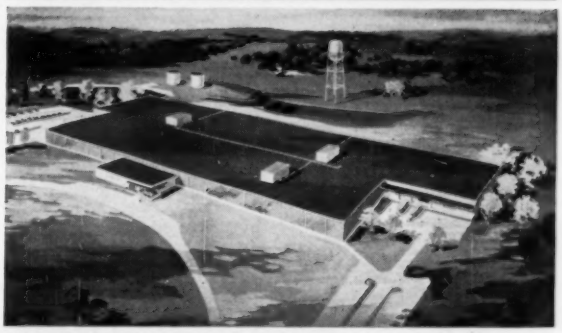
CHEROKEE TEXTILE MILL'S NEW 242,000 SQ. FT.
FANCY GOODS COTTON MILL, SEVIERVILLE, TENNESSEE



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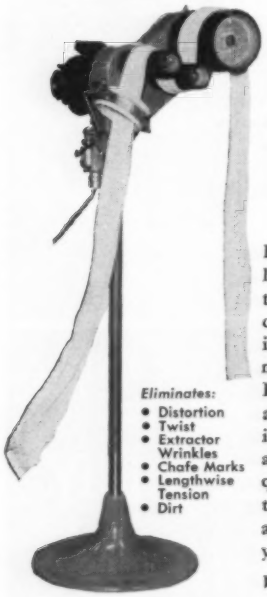

- Sorting Wet or Dry Goods from one truck into various trucks as to classification.
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NEWS ABOUT MILLS — Continued

of Craftspun Yarns, Inc., Kings Mountain, N. C., has leased a building to expand its pilot-plant operations.

No-Mend Hosiery Co., Gainesville, Fla., has ceased operations. About $250,000 worth of machinery will be moved to other plants.

Outlook Mfg. Co., Belmont, N. C., is installing additional machinery for the production of women's seamless hosiery. About 140 Scott & Williams and Bentley machines will be installed during the course of the year.

Poplar Textiles, Inc., Philadelphia, Pa., has started operations in its new mill at Amber and Willard Sts. The company's manufacturing and warehousing operations are now housed under one roof. The new facilities will increase the company's production about 50%.

Shelley Knitting Mills, Inc., Philadelphia, Pa., is installing $150,000 worth of new equipment as part of an expansion program.

Ware Knitters, Inc., Ware, Mass., has opened a new unit at Calais, Me. The new unit will operate as a stitching factory.

DYEING AND FINISHING PLANTS

American Dyeing Corp., Rockville, Conn., is installing machinery in its new plant. Production will begin this summer. The new plant will be used to finish industrial textiles.

Color-Knit Dyeing Corp., Elizabeth, N. J., has been organized by Edward Szlosberg and Joseph Weber. The company will piece-dye synthetics and blended-yarn sweaters and knitted fabrics.

Columbia Silk Dyeing Co., Inc., Philadelphia, Pa., has been incorporated to dye and finish natural- and synthetic-fiber yarns, threads, and knit goods.

Independent Textile Dyeing Co., Farmingdale, L. I., N. Y., will install equipment to finish fabrics for use in women's lingerie and blouses.

Johnson & Hardt, Inc., Paterson, N. J., is altering its plant to provide additional space. A new laboratory equipped with miniature skein- and package-dyeing machines will be installed.

Kerr Bleaching & Finishing Works, Concord, N. C., has completed a two-story, 7,200-sq.-ft. addition. A new tenter frame will be installed. The total cost will be about $120,000.

Malden Spinning & Dyeing Co., Malden, Mass., has completed an addition to the recently purchased Arlington Mill, Malden, Mass. The mill will be used for wet-processing operations. Some of the machinery is being transferred from the Malden mill.

Pequot Finishing Plant, Div. of Indian Head Mills, Whitney, S. C., is building two additions as part of a $200,000 expansion program. A wide high-speed frame and finishing range, a wide compressive-shrinkage machine, and calenders are included in the new equipment to be installed.

Phoenix Dye Works, Chicago, Ill., is building a $1,000,000 dye works plant in Cleveland, Ohio. The one-story building will contain 44,000 sq. ft. About 250 persons will be employed.

Rock Hill Printing & Finishing Co., Rock Hill, S. C., has completed the first section of its three-story warehouse. The second section will be completed this summer. Two more stories will be added in the future.

Southern Mercerizing Co., Tryon, N. C., has purchased the Kilburn Mill in Tryon. Southern Mercerizing expects to begin operation in its new location in June.

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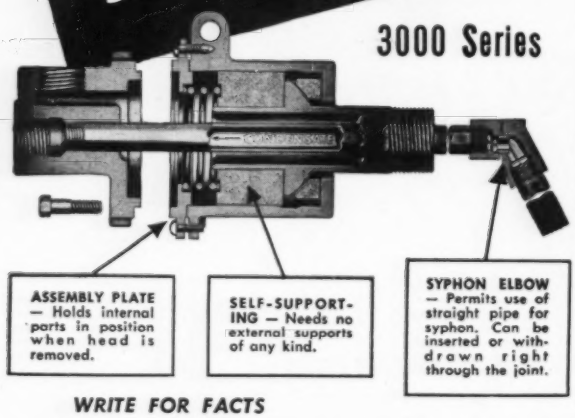
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Dan River Mills	Greenwood Mills	Bruck Mills (Canada)

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METALLIZING EQUIPMENT COMPANY, LTD.—Chobham near Woking, England

NEWS about MEN

E. A. Adams, Jr., has been named superintendent at Northfield Mills, Northfield, Vt.

Floyd V. Aiken, Sr., has been named general overseer of spinning at Aragon Mills, Aragon, Ga.

Jack W. Armstrong has been promoted to plant superintendent at Laurens Mills, Laurens, S. C.

E. J. Ashe has been elected president of Standard Knitting Mills, Knoxville, Tenn. He will retain his duties as general manager.

O. T. Austin has been named superintendent of Wilton Woolen Co., Wilton, Me.

James M. Bailey has been named vice president and general manager of Judson Mills, Greenville, S. C.

Henry Baldwin has been named general manager of Moss Rose Mfg. Co., Philadelphia, Pa.

William Ballard has been named overseer of carding at Excelsior Mills, Union, S. C.

G. M. Batlin has been named overseer of spinning at Laurens Mills, Laurens, S. C.

Roy M. Bayne has been promoted to superintendent of the Grendel Mill of Abney Mills, Greenwood, S. C.

Carl J. Beaver has been elected president of China Grove Cotton Mills, China Grove, N. C.

James M. Bennett has been named general superintendent and a vice president of Rock Hill Printing & Finishing Co., Rock Hill, S. C.

C. G. Bishop has been promoted to assistant superintendent in charge of weaving and yarn preparation at Laurens Mills, Laurens, S. C.

Roy E. Brasil has been named overseer of weaving at Riegel Textile Co., Trion Div., Trion, Ga.

Joseph V. Brice has been named assistant superintendent of Renfrew Bleachery, Travelers Rest, S. C.

C. D. Briggs has been promoted to manager of the Renfrew Bleachery, Travelers Rest, S. C.

Daniel Buckley has been named overseer of picking at Albany Woolen Mills, Rensselaer, N. Y.

Victor Bulfinger has been named overseer of finishing at A. D. Ellis Mills, Inc., Monson, Mass.

Wren Cardwell has been promoted to production supervisor and overseer of screen printing at the Unity Mill of Callaway Mills, LaGrange, Ga.

Lyndall F. Carter has been named executive vice president of William Carter Co., Needham Heights, Mass.

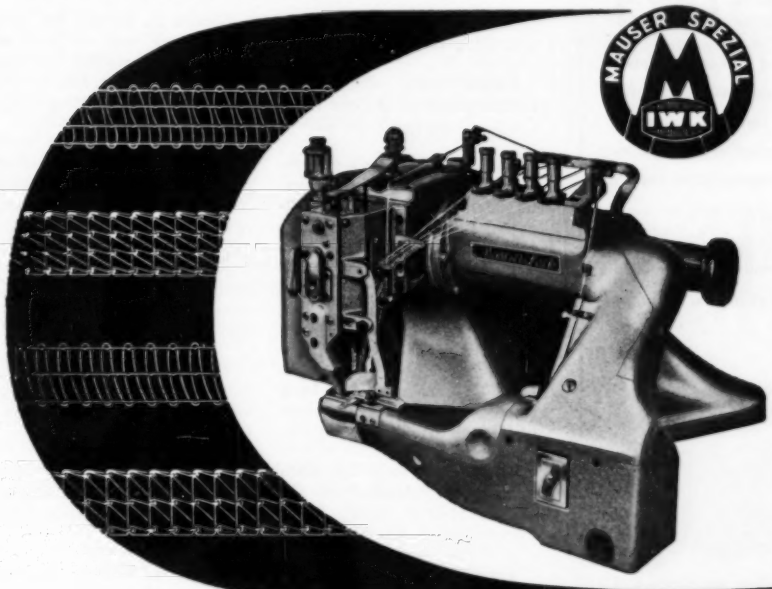
John Cash has been made overseer of weaving at Lippitt Worsted Mills, Woonsocket, R. I.

Harry G. Clarke has been named superintendent of Stevens Linen Mill, Webster, Mass.

Arthur R. Coffin, Jr., has been named superintendent of Cape Cod Weavers, New Bedford, Mass.

Joseph Collins has been named overseer of dyeing at

MAUSER SPECIAL Feed-off-the-arm Flat-seam Machine MAUSER LOCK



with trimmer and differential feed dog producing an extremely elastic 4-needle-covering seam with one lay in thread for the trimming, sewing together and hemming of all kinds of hosiery as well as elastic material.

- **Number of needles 3 and 4**
- **Breadth of seam 7/32" and 9/32"**
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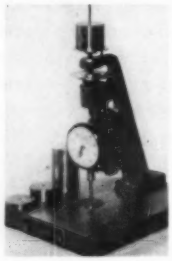
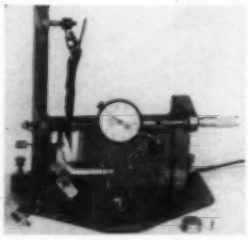


The C & R Tester for thickness, compression and recovery was designed to give the technician a versatile instrument. By a selection of pressure feet this instrument will meet many ASTM Specifications (D39, D76, D461 etc.) for thickness maintaining preload of ½ oz. For compression the dead load is applied to the sample without impact.



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NEWS ABOUT MEN — Continued

Massachusetts Mohair Plush Co., Inc., Lowell, Mass.

Ceasar Cone has been elected president of Cone Mills Corp., Greensboro, N. C.

Durwood Costner has been named assistant general superintendent of Rock Hill Printing & Finishing Co., Rock Hill, S. C.

Maurice D'Arginio has been named head finisher at La Francaise Dye & Finishing Co., Paterson, N. J.

N. C. Davenport has been elected general superintendent of Aragon Mills, Aragon, Ga.

Clyde C. Davis has been named superintendent of the Panola Mill of Abney Mills, Greenwood, S. C.

Francis DeOrsey has been named superintendent of weaving for Arms Textile Mfg. Co., Manchester, N. H.

Julius C. Di Rocco has been named head finisher at Mylan Finishing Co., Paterson, N. J.

C. Francis Egan has been named overseer of dyeing at Wilton Woolen Mills, Wilton, Me.

John Eastham has been appointed plant manager of Bates Mfg. Co., Androscoggin Div., Lewiston, Me.

D. Bruton Fitzgerald has been named general overseer of the preparation department at Aragon Mills, Aragon, Ga.

W. F. Flannigan has been named manager of the Anniston, Ala., division of Flagg-Utica Corp.

Walter E. Floyd has been named superintendent of the Goodyear Tire & Rubber Co. mill at Cartersville, Ga.

William Ford has been named general manager of Neisler Mills, Inc., Kings Mountain, N. C.

Charles S. Fowler has been named director of product development at Blue Ridge Textile Co., Inc., Bangor, Pa.

John Francis has been named superintendent on the C shift at Chatham Mfg. Co., Elkin, N. C.

Gideon A. Frankil has sold his interest and resigned as president of Somerset Knitting Mills, Philadelphia, Pa., to take charge of Union Knitting Mills, Philadelphia.

Paul H. Franz has retired as production manager of William Carter Co., Needham Heights, Mass.

John Frisch has been named overseer of finishing at Morschner Dye Works, Newton Upper Falls, Mass.

Francis Galligan has been named overseer of carding at Chicopee Mfg. Co., Manchester, N. H.

R. E. Gardes has been named overseer of spinning at Wilton Woolen Mills, Wilton, Me.

Joseph E. Gibson, Jr., has been named general manager of Wilkes Hosiery Mills, N. Wilkesboro, N. C.

Alfred Govin has been named overseer of carding at Wilton Woolen Mills, Wilton, Me.

James Greaves has been named head of the new finishing division at Great Falls Bleachery & Dye Works, Somersworth, N. H.

Robert C. Greene has been appointed superintendent of the synthetics-fabric mill of Fieldcrest Mills, Inc., Spray, N. C.

Harry Hawkins has been named night foreman of carding at Reedsburg Woolen Mills, Inc., Reedsburg, Wis.

Sam Hennessy has been named overseer of raw-stock dyeing at Peerless Woolen Mills, Rossville, Ga.

A. R. Hillman has been named overseer of dyeing, second shift, at Cedartown Textiles, Cedartown, Ga.

Frank Horman has been named superintendent of Martin Bros., Inc., Lawrence, Mass.

W. S. Huff has been promoted to manager of the Greer Plant of J. P. Stevens & Co., Inc., Greer, S. C.

John Learned has been named to head the industrial-

fabrics division and quality-control program of American Dyeing Corp., Rockville, Conn.

Thomas Lyons has been named overseer of finishing at Paragon Worsted Co., Providence, R. I.

Albert MacDonald has been promoted to superintendent of Charles E. Clapp Co., Braintree, Mass.

J. H. Mauldin has been promoted to overseer of all yarn preparation at Laurens Mills, Laurens, S. C.

Howard Mayo has been promoted to plant superintendent at Berkeley Mills, Inc., Balfour, N. C.

Marshall Mills has been named manager of Hazel Textile Dyers, Paterson, N. J.

Allan Mirenghi has been named general manager of the Velvet Div. of Alexander Smith, Inc., Liberty, S. C.

E. L. Murphy has been named overseer of finishing at Hartford Woolen Co., Hartford, Vt.

Alfred G. New has been named plant manager of Judson Mills, Greenville, S. C.

John T. Newton has been named assistant general manager at Plant No. 1, Dundee Mills, Griffin, Ga.

Jim Parrish has been named superintendent of Mackintosh Spinning Mill, Clover, S. C.

Ralph Pride has been named overseer of finishing at HoHo-Kus Bleachery, HoHoKus, N. J.

W. A. Pridmore has been elected general overseer of weaving and slashing at Aragon Mills, Aragon, Ga.

William E. Rowlandson has been named overseer of dyeing at North Berwick Co., North Berwick, Me.

Henry J. Sartrys has been named overseer of weaving at Ansonia Mills, Inc., E. Taunton, Mass.

Mrs. T. G. Shelton has been elected president of Paola Cotton Mill Corp., Statesville, N. C.

Edgar Smith has been named resident manager of Maine Spinning Co., Skowhegan, Me., and of the Richmond Mills, Richmond, Me.

B. E. Smith has resigned as manager of Roseboro Spinning Mills, Roseboro, N. C.

George Smith has been named resident manager of Pacific Mills, Lawrence, Mass.

Walter Spencer has been named overseer of carding at Kenwood Mills, Cavendish, Vt.

Harold Squires has been named foreman of the bedspread weave room at Fieldcrest Mills, Inc., Spray, N. C.

C. F. Stansell has been appointed manager of the Monaghan Plant of J. P. Stevens & Co., Inc., Greenville, S. C.

C. Lowrey Stafford, Jr., has been named president of National Mallinson Fabrics, New York, N. Y.

D. A. Stansell has been appointed manager of the Victor Plant of J. P. Stevens & Co., Inc., Greer, S. C.

S. Scott Stewart has been named president of Philadelphia Penn Worsted Co., Philadelphia, Pa.

J. B. Talbert has been named superintendent of Goodall-Sanford, Inc., Hot Springs, N. C.

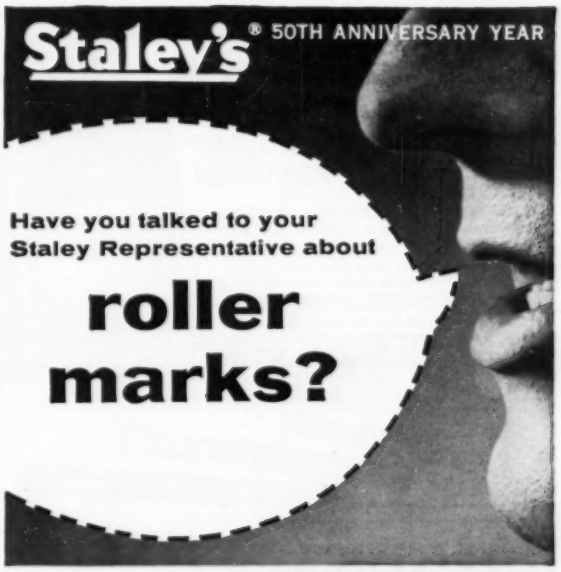
George Thompson has been named overseer of weaving at Paragon Worsted Co., Providence, R. I.

Sidney W. Tingen has been named general manager and treasurer of West Boylston Mfg. Co., Montgomery, Ala. He succeeds the late **G. Arthur Cook.**

Marshall Stone has been named assistant superintendent of Excelsior Mills, Union, S. C.

Harlan M. Trammell has been named director of rayon operations in the manufacturing department of the Textile Div. of Celanese Corp. of America, Charlotte, N. C.

M. W. Tucker has been named superintendent of



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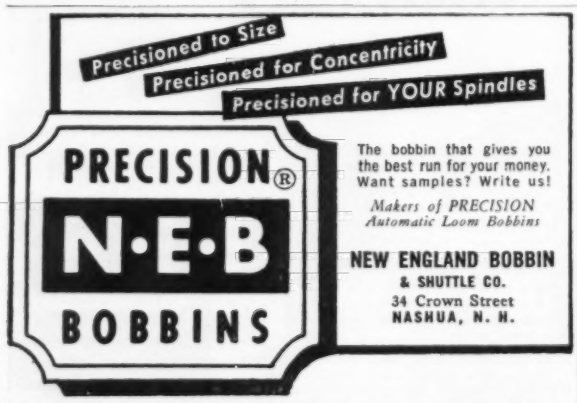
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NEWS ABOUT MEN — Continued

Adams-Millis Corp., Kernersville, N. C.

George A. Tunick has been promoted to assistant vice president of Bangor Mills, Inc., Pen Argyl, Pa.

D. C. Turrentine, Jr., has been appointed executive vice president of the textile plants of Simmons Co., Roanoke Rapids, N. C.

Myron Vaughn has been named overseer of wet and dry finishing at Brookneal Mills, Brookneal, Va.

J. Henry Walker has been promoted to superintendent of Plant No. 1, Dundee Mills, Inc., Griffin, Ga.

Martin Wallace has been promoted to plant manager at Laurens Mills, Laurens, S. C.

Forrest Ware has been named superintendent of dyeing and finishing at Ware Mills, Inc., Winchester, Va.

Fred Whalen has been named overseer of carding at the Orr Felt & Blanket Co., Piqua, Ohio.

H. D. Whitener has been elected vice president and general manager of Rex Mills, Inc., Ranlo, N. C.

Howard Wilcox has been named overseer of carding on the second shift at Geb & Souhan Yarn Co., Inc., Seneca Falls, N. Y.

A. T. Wilbanks has been promoted to assistant to the manager at Laurens Mills, Laurens, S. C.

OBITUARY

William J. Armfield, III, 49, president of Madison Throwing Co., Madison, N. C.

Joseph Berkson, 55, former treasurer of New York Knitting Mills, New York, N. Y.

Clifford W. Birch, president of Birch Bros., Inc., Somerville, Mass.

Arch Cash, 85, retired secretary-treasurer of Springfield Woolen Mills Co., Springfield, Tenn.

James F. Dewey, president of A. G. Dewey Co., Quechee, Vt.

Charles F. Gillooly, 53, supervisor of Lymansville Co., Lymansville, R. I.

Shelton S. Jackson, assistant treasurer of Cluett, Peabody & Co., Inc., Troy, N. Y.

George A. Larter, president of Allan Woven Label Co., Inc., Paterson, N. J.

Cecil Merrett, manager of Bonner-Worth Mills of Dominion Woolens & Worsteds Ltd., Peterborough, Ont.

Henry B. Miller, retired manager of Consolidated Textile Co., Inc., Lynchburg, Va.

R. Anselm Nelson, secretary of Chipman-Holton Knitting Co., Hamilton, Ont.

John M. Parker, 67, retired card-room section foreman at the Linford Mills, Belmont, N. C.

Clarence E. Rich, 49, plant manager at A. Schottland, Inc., Rocky Mount, N. C.

Curt Richter, 62, retired vice president and director of S. Stroock & Co., Newburgh, N. Y.

Charles H. Smith, 66, retired director and secretary of Coats & Clark, Inc., Pawtucket, R. I.

Werner Toebler, Sr., 66, retired president of Union Woven Label Co., Glen Rock, N. J.

Lester Wagenhorst, 72, former owner of Hyde Park Hosiery Co., Reading, Pa.

Max W. Winkler, 69, founder and president of the Blue Ridge Textile Co., Bangor, Pa.

Joseph Zimmerman, 50, treasurer of National Hosiery Dyeing & Finishing Works, Boston, Mass.

EMPLOYMENT OPPORTUNITIES

The Advertisements in this section include all employment opportunities—executive, management, technical, selling, office, skilled, manual, etc.

Positions Vacant
Positions Wanted
Part Time Work

Civil Service Opportunities
Selling Opportunities Wanted
Selling Opportunities Offered

Employment Agencies
Employment Services
Labor Bureaus

RATES

DISPLAYED

The advertising rate is $14.35 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

An advertising inch is measured ⅞" vertically on a column—3 columns—30 inches to a page.

Subject to Agency Commission.

UNDISPLAYED

$1.20 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.

Box Numbers—counts as 1 line.

Discount of 10% if full payment is made in advance for 4 consecutive insertions.

Not subject to Agency Commission.

Send NEW ADS to TEXTILE WORLD, 330 W. 42nd St., N. Y. 36, N. Y. for May issue closing April 16th

WANTED

DYESTUFF SALESMEN

experienced, with some following

for long established firm. Full support assured. Give details, terms desired first letter. Strictly confidential.

SW 1204, Textile World
330 W. 42 St., New York 36

SALES REPRESENTATIVE WANTED

for Georgia, Alabama territory, by Mfg. & distributor of complete line of textile loom & industrial supplies. Applicant should know textile machinery, and be familiar with mills in area mentioned. All replies held strictly confidential.

Write **RW-1228,** Textile World
330 W. 42 St. New York 36, N. Y.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)
LOS ANGELES: 1125 W. 6th St. (17)

POSITIONS VACANT

Salesman solicit yarn dyehouse full or part time. 5% com. basis. P-9489, Textile World.

Wool Blender wanted experienced man for woolen sales yarn mill to help management make up blends of wool, waste and synthetics on regular production and samples. P-9517, Textile World.

SELLING OPPORTUNITIES OFFERED

Agent required for sale of universal back-winding machine used for reclaiming waste yarn. Good commission. Only firm with highest references and connections with the textile trade should apply. All enquiries and particulars to Baugh & Moss Ltd., Abbey Lane, Leicester, England.

Agency Wanted—Medium size, progressive chemical company is seeking an agency or distributorship for Southern Territory, preferably one in the Charlotte area, to handle line of textile chemical specialties, including detergents, all types of finishing materials for synthetic fibers, warp sizing materials, sulfonated oils, liquid resins, fire retardants, etc. Seeking agency with positive contacts in the Southern Territory. Address reply to RW-1047, Textile World.

Sales Representative traveller salesmen wanted for Northern and Mid Southern territories. Salary and commission. Experience in textile field desired. SW-1163, Textile World.

When Answering
BOX NUMBERS...

to expedite the handling of your correspondence and avoid confusion, please do not address a single reply to more than one individual box number. Be sure to address separate replies for each advertisement.

UNUSUAL OPPORTUNITY

Man not over 35 to act as technical service representative. Must have textile background combined with general mechanical ability. Prefer college graduate but require at least two years college education or equivalent. Position entails considerable travel, offers permanency and many unusual opportunities. Replies held confidential.

P-1100, Textile World
330 W. 42 St., New York 36, N. Y.

Wanted

Man experienced in overhauling cotton pickers: Kitson, H & B, Aldrich, P & A.

Also

Young man 25-35, to train as picker fixer and supervisor of mixing room.

Apply to P. O. Box 909, Pawtucket, R. I.

POSITIONS WANTED

Thrower, Supt. or manager. Twenty-five years experience. Throwing of all fibers for all trades; knowledge of modern methods, costs, and incentives. Excellent references willing to relocate. PW-8017, Textile World.

Plant Supt. or Supt. of weaving fully experi-enced all types fibers. Draper and C. & K. looms, and all preparatory debts. Excellent references. Will consider overseas position. PW-9302, Textile World.

Wanted Position as supt, Ass't supt. or as technical representative for customer service. Training in industrial management, personnel management and industrial relations. Twenty-five years experience in textile management and processing. Will furnish excellent references. PW-9558, Textile World, 330 W. 42nd St., New York, N. Y.

Georgia Tech graduate with over 20 years experience in cotton textile finishing desires new connection with textile finishing plant any where in the USA. Production and administration from gray room through shipping. Available short notice. PW-9525, Textile World.

Conning Mechanic Expert 30 year's experi-ence on universal #50 and #30 model machine's clutch and L Drive's experienced with all type stretch yarn. Latest and up to date method's used. (Single). PW-1164, Textile World.

Overseer weaving, ICS Graduate, ten years as overseer of weaving. Experience corduroy cotton and rayon. Good references. PW-1150, Textile World.

Textile Engineer graduate, 20 years experi-ence in woolen-worsted fabrics, knitting yarn production, initiating systems of manufacture, administration, cost calculation, wishes to locate with American woolen manufacturer. Excellent references. Speak 5 languages. PW-1141, Textile World.

TEXTILE COLLEGE GRADUATE

EXPERIENCE: Research; fabrics, garments, field evaluations. Styling; shirtings, dress goods. Administration.

SEEKS: Field Representative (not straight sales). Liaison (Mill, Advertising, Sales dept.) Other.

PW-1160, Textile World
330 W. 42 St., New York 36, N. Y.

POSITIONS OPEN

We can place—Sweater mill managers, supts., overseers and fixers; print works mgr. and supt.; gen. supt. cot. mill; supt. southern cot. mill, coarse yarns; gen. supt. cot. mill; wstd. yarn mill supts., asst. supts., overseers, section hands and fixers; garment factory mgr.; personnel mgr.; win. cloth and yarn mill supts.

OVERSEERS for—pick. and garnetting; win. card.; win. spin.; napping; burl. and mend.; win. card. and spin. combined; cot.-rayon piece goods dye.; finish. nylon knitted fabrics win. finish.; wstd. twist. and wind.; finish. synthetic fabrics. Foreman or forelady knit goods finish., stitch. and sewing; foreman or forelady drawing-in.

MASTER MECHANICS; plant engineers; designers and draftsmen; asst. master mechanics; machine shop foremen; chemists and chem. engineers; time study-industrial engineers; textile school graduates; sales trainees; color matcher; pin setter.

FIXERS for Scott & Williams, Komet, Links and Links, Tompkins and Wildman machines; sewing mach. fixers; expert Raschel mechanic; fixers for plush, cot., win. and synthetic fabric looms; win. frame fixer; finished percher.

SEND US YOUR RESUME. Many attractive positions at excellent salaries are open for top-notch men. No fee to be paid unless you accept employment through us. Negotiations are confidential.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St. Boston 8, Mass.
Phone: LIberty 2-6547
Over 55 Years In Business

TEXTILE CHEMIST

We are a progressive and expanding company located in the United States with a Canadian subsidiary. Our plans include the establishment of laboratory facilities in Montreal to serve the textile industry, primarily in the Province of Quebec, on a wide range of textile products. We require a graduate Chemist with plant experience in printing and finishing, who is capable of handling technical problems, both in the laboratory and field on specialties for sizing, printing and finishing of cotton and synthetic fibres. Some development work may be required. Give details of education, experience and salary requirements.

P-9087, Textile World
330 W. 42 St., New York 36, N. Y.

TEXTILE CHEMIST

Creative chemist with 3-5 years of plant experience in sizing, printing and/or finishing wanted to work in Charlotte, North Carolina, Laboratory of growing industrial firm. Splendid opportunity for man with initiative, who is capable of working with a minimum of supervision. Position entails the development and evaluation of textile specialties for sizing, printing and finishing cotton and synthetic fibers. Send detailed resume of experience. State salary requirements.

P-8817, Textile World
330 W. 42 St., New York 36, N. Y.

CLASSIFIED SEARCHLIGHT SECTION ADVERTISING

BUSINESS OPPORTUNITIES — EQUIPMENT - USED or RESALE

UNDISPLAYED RATE:

$1.20 a line, minimum 3 lines. To figure advance payment count 5 average words as a line.

PROPOSALS, $1.20 a line an insertion.

BOX NUMBERS count as one line additional in undisplayed ads.

DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

DISPLAYED RATE:

The advertising rate is $12.65 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page.

EQUIPMENT WANTED or FOR SALE ADVERTISEMENTS acceptable only in Displayed Style.

Send NEW ADVERTISEMENTS to N. Y. Office. 330 W. 42nd St., N. Y. 36, N. Y. for May issue closing April 16th

MACHINERY AND EQUIPMENT

of the former American Woolen Co.

SHAWSHEEN MILLS—ANDOVER, MASS.

AT PUBLIC AUCTION

TUES. and WED. APRIL 17 and 18, 1956

Commencing each day at 10:00 A. M.

2600 LOTS 2600

S-L 84 in. HI SPEED HOT AIR SLASHER, YEAR 1949, W/A&G DRYER, S. S. SIZE BOXES, 14 BEAM CREEL * S-L 84 in. Hot air slasher, w/A&G dryer, 10 beam creel * 112 C&K MDL W2 AUTO. 4X1 LOOMS * ABBOTT 140 spdl. auto. quiller * 43 T-W Noble combs * 40 SACM and Schlumberger French Spinning Sets. * D&F Mdl. 60 electro pneumatic hi speed spoolers * Entwhistle hi speed warpers * 14 Foster No. 25 and No. 55 doublers * 222 C&K 82 in. auto. 4X1 looms * GARNETTING MACHINERY INCLUDING: 13 Hunter 6 cyl. 60x30 in. garnets, Hunter 7 cyl. 60x30 in. garnet, pickers, shredder, cutter, etc. * Butterworth 78 in. 4 burner singer * A&G tenter dryers * Birch continuous washers * R&L and HUNTER S. S. TOTALLY ENCLOSED PIECE DYE KETTLES * Butterworth cloth steamer * Gessner 66½ in. cloth press * Gessner semi decaters * D&F dressing reels * P&W 6 blade Centurial shear * 78 Collins 200 spdl. twisters * Magazine creels; shuttles; harnesses; perches; bobbins & spools; comb circles; humidifiers; scutchers; dial scales; machine, woodworking and pipe shops; steel shelving; trucks; air compressors; electric motors; capacitors; mixers; tanks; blowers; and hundreds of items found in a well equipped textile plant. Sale to take place upon the premises and will be sold piece by piece. A deposit of 25% will be required. Inspection daily to time of sale. Illustrated and descriptive catalog upon application.

HENRY S. ANTHONY & CO.

AUCTIONEERS

LOWELL MASS.

219 CENTRAL ST. Telephone GLenview 2-4991

April's SPECIAL VALUE!

1 Atlas Electric LANDER-O-METER, Model LHD-EF with Preheater—LIKE NEW!

1 Toledo Scale, Dormant Type, Style 31-1511-FD, Platform 72"x48", 1625 lbs. cap.

6 Arnold Rubber Covering Machines, 160 Spindles each for producing 80 ends per machine, Motor Driven, 5 h.p., 3469 r.p.m.

1 C&M Railway Type Sewing Machine with Rolling Head for 100" Goods. Complete with Motor Driven, Merrow 60-abb head. Late Type.

STANDARD MILL SUPPLY COMPANY

1064-1080 Main Street *Phone: PAwtucket 3-1534* Pawtucket, R. I.

WANTED—AT ONCE

DOUBLE CYLINDER DOBBYS with rocking motion ⅜" gauge 20 harness for C & K Looms.

Also known as Huk Dobbys. Contact:

MALDA MILLS

114 Straighth St. Paterson, N. J. *LAmbert 5-0747*

WANTED

ReRoll and Slitter

Used slitter for occasional use, suitable muslin and 10 ounce burlap, 45" wide Minimum

P.A., KAY MFG. Corp.

Brooklyn 1, New York Phone: MAin 5-7300

WANTED—DYESTUFFS

Chemicals — Pigments — Solvents

Plasticizers — Plastics — etc.

By-Product — Wastes — Equipment

CHEMICAL SERVICE CORPORATION

80-10 Beaver St. New York 5, N. Y.

DYESTUFFS

Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.

91 Oliver St. Boston, Mass.

Established 1919

WANTED

GOOD USED STEEL ELEVATED WATER TANKS — SELL US YOUR ELEVATED TANK, IF NO LONGER NEEDED.

WE BUY — SELL — MOVE — ERECT NEW — USED STEEL ELEVATED WATER TANKS AND PROVIDE PAINT OR REPAIR MAINTENANCE FOR THESE STRUCTURES.

UNIVERSAL CONSTRUCTION COMPANY

1129 Udell St. INDIANAPOLIS 23, INDIANA

WANT TO BUY

Electric Baling Presses

All Makes, Any Condition

Write, Wire or Phone BAldwin 3-8686

Fertik & Company

9th & Tioga Sts., Philadelphia 40, Pa.

WANTED

LOOP DRYER

Automatic suitable for tubular knit goods. Must be in perfect condition.

Apply **SHAWIN CO. LTD.**

8031 18th Ave. Ville St. Michel, Quebec, Canada

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

BUSINESS OPPORTUNITY

Available 10,000-square foot, steel, masonry building, 6-inch concrete floor, on two main highways, in Central Texas area. Building can be enlarged to necessary requirements. Plenty native-white farm-bases labor. Responsible firm can make attractive deal. Write, wire or telephone 5-2251, Rising Star Chamber of Commerce, Rising Star, Texas.

PROFESSIONAL SERVICES

PATENTS

Information concerning procedure furnished upon request, without obligation.

B. P. FISHBURNE

REGISTERED PATENT ATTORNEY

702A McLachlen Bldg. Washington 1, D. C.

MODERN TEXTILE MACHINERY

AT THE FOLLOWING

LIQUIDATION SALES

Announcing New Liquidation Sale:

The former PENDERGAST MILL,

Bridgeton, R. I.

36—C&K W3 Looms, 82", 25 harness dobby, motor.
12—C&K W3 Convertible Looms, 82", 25 harness dobby, motor.
12—C&K W3 All-purpose Looms, 82", 25 harness dobby, motor.
24—Spdls. Hacoba Automatic Filling Winders—1954.
12—Spdls. Britoba (Mischamp) Filling Winders—1951.
1—H&W Yarn Conditioner, Ri, single truck.
1—Voelker 66" High Speed Press, motor driven.
2—Rodney Hunt Express Fulling Mills, Stainless Steel, 8 string.
1—Rodney Hunt Fulling Mill, 6 string, 25 hp. motor.
1—Rodney Hunt S.S. Washer & Dye Kettle, 6 string.
1—Rodney Hunt 8 string Dolly Washer.
1—Birch Detwister and Birch Detacker.
1—Gessner 72" Scutcher & Vacuum Extractor, 25 pump.

The former AMES TEXTILE CORP.,

Southbridge, Mass.

110—Crompton & Knowles W2 Looms, 82", 20 harness dobby, motor driven.
1—Bachman-Uxbridge Gentle Air Slasher, 80", West Pt. Boxes, 1950.
7—Saco-Lowell Tape Drive Twisters, 200 spdls. ea., 3" ri, 4" & 5" ga.
6—Riggs & Lombard Satinless Steel Encl. Dye Boxes, 6' wide.
1—Birch Cypress Washer, 82" wide, 4 squeezers, 1946.
1—Riggs & Lombard Rope or Open Washer, 4 compts., 54".
1—Kenyon Pin Tenter Dryer, 40' l., 84" w., multi-pass, complete.
1—David Gessner Hi-Speed Press, 66" wide, complete, 1948.
2—Parks & Woolson Centurial Shears, 66", 3 blades, motor driven.
2—Gessner & Parks & Woolson Semi-Decaters 72" & 66", 1948-53.

The former CLUETT, PEABODY MILL,

North Grosvenordale, Conn.

36—Del. Saco-Lowell Controlled Draft Drawing, 4 del, 1949.
72—Del. Saco-Pettee 4 Del. Drawing, rebuilt 1951.
6—Saco-Lowell Lap Winders, Model #37, 1949.
25—Saco-Lowell Combers, 12 heads, 10-½" lap, 1936-41.
1—Barber-Colman Hi-Speed Quiller, 30 spdls., 1949.

The former GOSNOLD MILL,

New Bedford, Mass.

23—H&B Cotton Cards, 40", 26" doffer, spindle backs, 110/120 wire.
5—H&B 10 x 5 Slubbers, Hi-Draft, 104 spdls. ea., 1940.
32—H&B Spin. Frames, S-L Roth L.D., 2-¾" ga, 1-¾" ri, 288 spdls.
56—Crompton & Knowles C6 Looms, 60", 25 harness dobby, 4x1 box, 1946.

Other Machinery For Sale

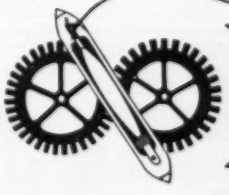
26—Lowell 40" Cards, 27" doffers, 12" coilers.
1—Abington Card Stripping System w/Hoffman pump, 1947.
15—Whitin Tape Drive Spin. Frames, Model F, 204 spdls., 3-¼" ga.
2—Sipp-Eastwood Redraw Machines, Model GK, 120 spdls, age 1954.
1—Hermas 4 Blade Shear, Model AV, 75" wide, 1947.
16—Atwood Uptwisters, Model #110, 208 spdls, 2 lb. Headless Package.
1—Johnson 7 Drum Slasher 62" headway, 1949.
1—Cocker 7 Drum Slasher, 62" headway, 1948.
12—Whitin Superdraft Roving Frames, Model G8, 8x4, 72 spdls.
2—Edmos Circular Knitting Machines, Model EEM, 17"-24" dia.
2—Hinnekens Stainless Steel Dye Boxes, 12' wide, 1948.
1—Greenville Stainless Steel Slack Rope Washer, 1948.
1—Stainless Steel Pneumatic Wringer, 1948.

General Equipment Available:

1—Ingersoll-Rand Air Compressor, 20x13, Synchronous 25 HP.
4—Ingersoll-Rand & Fulton Air Compressors, 100 & 125 HP.
1—Economy Bale Press 61x32x65.
1—United Miller, 2 HP motor.
1—Stockbridge Shaper, 2' stroke, 3 HP motor.
1—Kalamazoo Metal Cutting Band Saw.
1—Hydraulic Motor Truck, battery charger.
6—Transformers, 50 KV, 2200 volts.
1—Reilly RO Boiler, age 1949, 60,000 lb. SPH.
1—Cochran Deareating Heater, 150,000 lb. SPH, age 1944.
2—G. E. Steam Turbo Generators, 1000 KW 1-condensing; 1-non-condensing, 2300 volts.

Real Estate for Sale or Lease:

Southbridge, Mass.—300,000 sq. ft., multi and single story modern brick buildings.
New Bedford, Mass.—150,000 sq. ft., multi story brick building and single story warehouse.
East Rochester, N. H.—140,000 sq. ft., built new 1949, modern manufacturing building, connecting ramps, spacious.
Bridgeton, R. I.—43,000 sq. ft., three story and single story manufacturing space.



Republic

TEXTILE EQUIPMENT COMPANY

40 Worth Street, New York 13, N. Y., U. S. A.

REFINANCING • APPRAISALS • PURCHASE & SALE
LIQUIDATIONS OF MILL PROPERTIES • PURCHASE AND SALE OF USED MACHINERY

FOR SALE—WAREHOUSE STOCK

1—P&W 4 Roll BRUSH & SANDING Machine w/Folder and Motor.
1—P&W 2 Cyl. WET BRUSH, 66" Cyls., 34" Dia., Folder and Motor.
8—Nylon BRUSH ROLLS, 114" face, 7" dia.
725—SPINNING FRAME BOBBINS, 12⅛" long, 2½" conical base.
1—Van Vlaan. BUTTON BREAKER, 19 Rolls, 59" face.
1—D&F Ceiling type Synthetic STOCK CONDENSER, Cyl. 18"x30".
2—S-I Ceiling Type STOCK CONDENSERS, Model 12E.
1—Entwistle Magazine CREEL, 504 Ends, Reiner double dis tensions.
20—Schlumberger Delete COMBING Machines, Segment width 310 m/m.
18—CAN COILERS for Cans 12" dia. x 37".
1—R&L Fleetline Yarn CONDITIONER, 1944, Stainless Steel Lined.
1—P&S 60" Single Cyl. Double Doffer STAPLE CARD.
3—CHINCHILLA Machines, C&M., Hunter, Kenyon, 62—80".
3—SEMI-DECATURS, High Prod. Gessner, P&W, 36", 60" dia. Cyls.
1—P&W DOUBLER & WINDER 66" with Measuring Drum and Counter.
1—P&W DESPECKING Machine with Scray and Folder.
2—Mercury 48" EXTRACTORS, Copper Baskets.
1—Gessner 72" VACUUM EXTRACTOR, Motor and Nash Hytor Pump.
1—Harwood 72" Steel Hopper FEED, large capacity.
2—C&M 96" CEILING FOLDERS with Motor Drive.
3—E&H and C&M. FLAT FOLDERS, 50-72" width, fixed, adj. folds.
2—Ceiling type SWING FOLDERS, 54" arms, 115-120" width.
2—INSPECTING Machines, C&M., P&W., 66", 96".
1—Butterworth S.S. PACKAGE DYEING Mach., 256 package, auto. controls.
100—C&K Auto. Looms, W3, W2, W1, 76" to 92".
2—D&F 14 Roll, S.A. NAPPERS, 72" and 80", motorized.
2—P&W., D&F., D.A. NAPPERS, 24 Roll, 72", 80".
1—Gessner D.A. NAPPER, 18 Roll, 72".
1—Gessner Rotary Steam PRESS, Hi-Production, Cyl. 20" dia. x 72".
6—Rubber ROLLS, 11-14" dia. x 66½" face.
2—Davidson P&W SHEARS, 66½", 2 and 3 Blade, with Guiders.
4—Single and Double SHEARS, 47"—90". (Please advise requirements)
3—Scott TESTING Machines, Cloth, Yarn, motor and hand driven.
1—Abbott 120 Spdle. auto. Tube WINDER, Model 62, Motorized.
2—Foster Mod. 101 Tube WINDERS, 76, 100 spindles.

McDOWELL ASSOCIATES INC.

General Offices 41-E. 42 Street
New York City 17, N. Y.
Phone: Murray Hill 2-7417

Warehouse No. 1 N. Front,
Dock & Water Sts., Hudson, N. Y.
Phone: Hudson 8-3211

TEXTILE AUXILIARIES

WE BUY, SELL, APPRAISE, AND LIQUIDATE

We offer for immediate SALE high quality Finishing Machinery located at the Guyan Mills in Pawtucket, Rhode Island.

2—Dye Jigs 60" face with HP 550V motors, stainless steel

2—Dye Jigs (Morrison Machines) 60" face with Glasco stainless steel enclosure HP 550V motors

1—Horizontal Extractor and 550V motor

1—Textile Tenter Frame 70' long, 40' Andrew and Goodrich housing complete with steam heating units and circulating fan. General Electric weft straightener, overhead & batch feeds Foxwell controls, Reliace D.C. generator and variable speed drive

1—Winsor & Jerauld Tenter Frame 70' long, equipped same as above with Bryant Mixjet system with Blast Burners for gas booster assembly for high temperatures and electric batcher at take off end. Electric Heat Selvage cutting device.

1—Winsor & Jerauld Tenter frome 90' long equipped same as first frame described above plus General Electric batcher and still Radiant Heat oven with 4 Fibreglass super-heaters and reflectors and radiomatic control and Brown Pyr-O-vane with cooling device and pneumatic operated retraction device, Maimin Cloth Cutting Machine for removing selvage

Also Scutchers from 45" to 76"

1—Hunter 78" 15 ton hydraulic 2 Roll Padder

We have in stock for immediate delivery A.C. and D.C. motors from 1 H.P. to 100, also spare tenter frame chains, Rubber Calender Rolls, etc.

For further information write or Telephone:

Office and Warehouse
146 West River Street

Telephone
Dexter 1-9650 Dexter 1-8837

PROVIDENCE, R. I.

20 ATWOOD 10B's & FLETCHER DOUBLERS

SPINDLESS—60 S.P.—1948—4½" TRAVERSE

30 ATWOOD D.D. UPTWISTERS
½ Lb. Pkg.—2 Motors

1—S.S. TANK—230 GAL. CAPACITY GLASS INDICATOR

150—UNIVERSAL 250B SIZING MACHINES

100—UNIVERSAL CONERS
3' 30' Taper "L" Drive-Gear Box "A"—Oiling & Pineapple Attachments—S.S. Troughs

35M—All Aluminum TAKE-UP SHAFTS
3¼" T.x4" H.x2¼ BBL.

2000—STAINLESS STEEL BOBBIN TRAYS

BOBBINS—SPOOLS—QUILLS—ALL Sizes & Types

PENNSYLVANIA SPOOL & EQUIPMENT CO.

425 LEHIGH ST. ALLENTOWN, PA. Phone 3-7545

'26 — 30th ANNIVERSARY — '56

2M—Brand new Picker Sticks, (Automatic & Box Loom)
2880—Mod. E Wool Spng. Bobb. 12"
62—Loom Motors, ½ HP, 60/3/550
150M—A.L. 8-½" bobb. selected
1M—Hedd. frms with hedd.
150 pr. Moss. Pr. St. 24" Beam Flngs.
250M—flat stl. 14" Hedd.

Loom parts—gears—fibre cans—reeds dropwires—bobbins.

—L. J.— McCAFFREY & SON, INC.

Box 495 *Phone Pawtucket 3-1314* Pawt, R.I.

—FOR SALE—

★ 5 Abbott Quillers, 1949 Model, 160-spindles each, 4 color cycle changers
★ 3 Foster Model #102 Winders, 100 spindles x 7" Traverse
★ 4 Whitin Model BJ Twisters, 4" ga., 3" ring, motor driven by Westinghouse 15 hp. 550/60/3
★ 1 Economy Bale Press—Down Stroke—Model 64 FIS, 5 hp. motor

Whitehead Supply & Eng. Co.

533 Main Street Melrose, Mass.
Phone Melrose 4-4980

Stave & Kessler

TEXTILE MACHINERY
106 KEARNEY ST., PATERSON, N. J.
P. O. BOX 1611,
AR 4-7486
SH 2-4958

MILLER MACHINERY CO.

66 RAILROAD AVE. PATERSON, N. J.
Tel. Sh 2-5467-8

Textile Machinery and Supplies

BOUGHT AND SOLD
Warpers • Winders & Quillers • Looms

HOSIERY MACHINES

used and rebuilt

KNITTERS — RIBBERS — LOOPERS
CYLINDERS — DIALS — TRANSFERS
HOSIERY NEEDLES AND PARTS
JOS. BRESANI
N. W. Cor. Hancock & Somerset Streets
Phila. 33, Pa.

WE BUY AND SELL
TEXTILE MACHINERY
THROUGHOUT THE WORLD!
GEORGE W. EGAN
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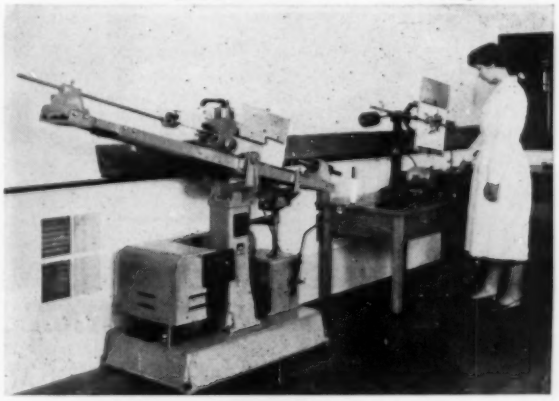

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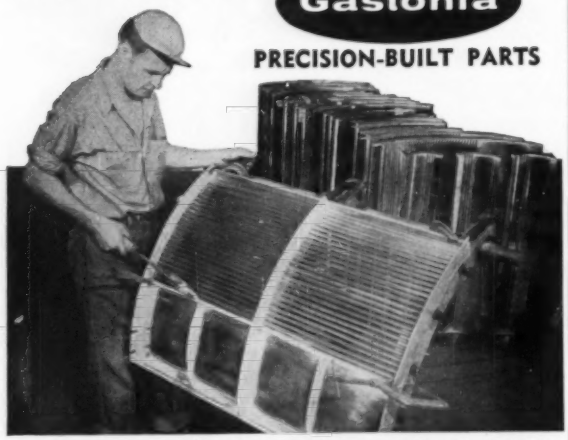

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GASTONIA standard type rib or perforated Card Screens are cut and assembled on specially designed precision-built jigs.

Maximum operating efficiency and utmost durability of these Card Screens is assured by thorough checks at various stages of manufacture. Scientific final inspection guarantees setting points within standard tolerance.

GASTONIA Card Screens, like all other GASTONIA Products, are precision-built from the finest materials by highly skilled workmen having many years of practical experience.

Gastonia TEXTILE SHEET METAL WORKS, INC.
Gastonia, North Carolina

A sheet metal works serving textile mills

CYLINDERS
Dynamically balanced for better performance—reduce vibration to an absolute minimum.

SCREENS
Picker, Condenser and Waste Machine Screens of maximum strength and durability.

ASPIRATORS
Precision manufacturing methods assure proper shape and balance of Aspirators and Aspirator Dampers.

LAP CONDUCTOR TINS
WASTE CHUTE COVERS
WASTE CHUTES
SLIVER PANS
BACK TINS

COMBER RENEEDLING
Top Combs, Half Laps and Winder Guide Combs precision-rebuilt of top quality materials to manufacturer's standard specifications. Imported English needles of tempered high-tensile steel used exclusively.

Yarn Div	40	G
Century Electric Co	20	F Q
Chemstrand Corp.	58-59	G
Chrysler Corp. Airtemp Div.	48	A
Cities Service Oil Co	147	M
Cleveland Tramrail Div., The Cleveland Crane & Eng'g. Co.	74	P
Clipper Belt Lacer Co	190	Q
Cocker Machine & Foundry Co	66	R
Cole Mfg. Co., R. D	200	B F
Columbia-Southern Chem. Corp.	136	C
Combitex G. M. B. H	167	T
Continental Can Co., Shellmar-Betner Flexible Pkg'g. Div.	165	P
Continental Diamond Fibre Div., The Budd Co., Inc.	196	P
Corn Products Refining Co	42	C
Crane Co.	60	H
Crompton & Knowles Loom Works	13	R
Crompton-Richmond Co., Inc.	228	N
Crucible Steel Co	68	O
Curtis & Marble Mach. Co	230	F
Custom Scientific Instruments, Inc.	240	K
Dary Ring Traveler Co	204	T
Dayton Rubber Co., The Textile Div.	16-17	RT
Deutscher, Spinnereimaschinenbau, Ingolstadt	21	T
Diehl Mfg. Co	45	F Q
Dodenhoff Co., Inc., W. D	186	R
Dolge Co., C. B	198	B
Dow Chemical Co.	70-71, 201	C
Draper Corporation	1	R
Dronsfield Bros. Ltd	254	T
duPont de Nemours & Co., E. I. Dyes & Chemicals Div	149	C
Electrochemicals Dept	217	C
Eaton Mfg. Co. Dynamatic Div.	55	Q
Elliott Co.	181	F
Emerson Apparatus Co	198	K
Engineered Plastics, Inc	236	T
Fairchild Engine & Airplane Corp. Speed Control Div	53	F
Fairtex Corp.	72	G
Finnell System, Inc	78	D
Foster Machine Co	143	T
Franklin Process Co	29	G
Gardner-Denver Co.	73	H
Gastonia Textile Sheet Metal Works	252	T
Gaylord Container Corp	132	P
General Dyestuff Co	205	C
General Electric Co.	66B-66C	F Q
Lamp Div.	235	F
General Latex & Chem. Corp	180	C
Globe Dye Works Co	184	G
Goodrich Chemical Co., B. F	12	C
Graton & Knight Co	218	R
Gulf Oil Corp	39	M
Harshaw Chemical Co	225	C
Haskell-Dawes-Machine Co., Inc.	202	T
Hayes Industries, Inc	66A	R
Heineman Corp., Oscar	237	G
Hermas Machine Co	222	E
Herr Mfg. Co., Inc	216	T
Hungerford & Terry, Inc	232	B
Hunt Machine Co., Rodney	49	E
Hunter Machine Co., James	61	E
Huyck & Sons, F. C. Noone Ind. Fabrics Div	232	E
Hyatt Bearings Div., General Motors Corp	177	O Q
Industrial Rayon Corp	43	G
Industrie-Werke-Karlsruhe	239	E
International Business Mach. Corp.	18	N

Jacquard Knitting Mach. Co., Inc.	2	L
Jenkins Bros.	47	H
Jenkins Sons Inc., M. W.	6	E
Johnson Corp., The	238	H
Jones & Hunt, Inc.	207	F
Jones Box Corp., Jesse	239	N
Keever Starch Co.	211	L
Kidde Mfg. Co.	54, 229	L R
Kuljian Corp., The	242	N
Laurel Soap Mfg. Co., Inc.	253	C
Lazenby Co., The F. A.	198	T
Leighton Machine Co.	220	L
Link-Belt Co.	7	Q
Loper Co., Ralph E.	241	N
Louden Machinery Co.	57	D P
Lunkenheimer Co., The	77	H
Main, Inc., Chas. T.	240	N
Manhattan Rubber Div.	38	Q
Marquette Metal Prods. Co.	209	T
Metallizing Engineering Co., Inc.	238	O Q
Micro Switch Div.	227	F
Minneapolis-Honeywell Reg. Co.		
Industrial Div.	163	K
Micro Switch Div.	227	F
Monsanto Chemical Co.		
Plastic Div.	197	C
Montgomery Co., The	240	G
Morton Salt Co.	151	C
Mount Hope Machinery Co.	134	F
National Aniline Div.,		
Allied Chem. & Dye Corp.		
Chemical Div.	33	C
Fiber Div.	178-179	G
National Ring Traveler Co.	34	T
New Departure Div of General		
Motors Corp.	15	O Q
New England Bobbin & Shuttle Co.	242	R
Nitrogen Div.,		
Allied Chem. & Dye Corp.	67	C
Noone Industrial Fabrics Div.		
F. C. Huyck & Sons	232	E
Nopco Chemical Co.	23	C
Norgren Co., C. A.	188	M
Oakite Products, Inc.	234	C
Ordnance Gauge Co.	200	L
Parks-Cramer Co.	11	A D
Penick & Ford, Ltd., Inc.	194	C
Pick Mfg. Co.	203	E
Pittsburgh Corning Corp.	35	B
Portland Co.	199	E L RT
Potts Co., Horace T., Speedline		
Stainless Steel Fittings Div.	235	H
Proctor & Schwartz, Inc.	44	E
Raybestos-Manhattan, Inc.		
Manhattan Rubber Div.	38	Q
Reiner Inc., Robert	219	L
Republic Steel Corp.	30-31	O
Reynolds Metals Co.	24	G
Rhoads & Sons, J. E.	5	R
Ridge Tool Co.	199	H
Riggs & Lombard, Inc.	170	E
Robbins & Myers, Inc.	231	H
Robert & Co. Associates	2nd Cover	N
Roberts Co.	9	T
Rohm & Haas Co.	155	C
Rollway Bearings Co., Inc.	66D	O Q
Roy & Son Co., B. S.	224	T
Ryerson & Son Inc., J. T.	192	O
Saco-Lowell Shops	28, 138	T
Sargent's Sons Corp., C. G.	176	E
Scherr Co., Inc., George	242	E
Schweiter Co., Ltd.	215	T
Scott Testers, Inc.	251	K
Simco Co., The	196	E L RT

The Laurel Leaf

BUSINESS MAGAZINE EDITION

If you are looking for *really good* general purpose cationic softener, we recommend Laurel OLAMINE WN. This quality product is a soft, light colored paste which is very easy to disperse in water. It possesses excellent softening properties and is being used with satisfactory results on cotton, wool, nylon, acetate, and orlon . . . on yarn, knitted and woven piece goods. The excellent ageing properties of Laurel OLAMINE WN recommend it for use on whites. And, it has no adverse effect on shades! It is compatible with resins, dextrines and most finishing agents. It is also an excellent top softener for resin finished goods. For most uses about 1% OLAMINE WN on the weight of the goods is all that is required. Apply it by pad, quetsch or open kettle method.

•

Do you need a good renewable water repellent for cotton? Laurel *WATER REPELLENT M* is quite possibly the answer to your requirements. It is stable to storage, forms stable emulsions at use concentrations, and is readily dispersible without boiling. Laurel *WATER REPELLENT M* may be applied by pad or open kettle methods. (Small quantities will do a big job!) Let us send you a working sample and see its advantages for yourself.

•

Laurel *RUXITE A* is an excellent lubricating and conditioning agent for rayon novelty yarns. It will add softness and improve the running properties. It is a mineral oil type product which forms stable emulsions with water, and may be used either neat or in emulsion form. It is very stable to storage and is easily removed in a regular scour.

•

If you are dyeing any Arnel-Dacron blends, we suggest you take a good look at *LAUREZOL HT* for use as an accelerator. *LAUREZOL HT* will give good unions and is readily removed from the goods after dyeing with a good soaping off and rinse. We recommend about 20% on the weight of the fabric for satisfactory results.

Laurel Brand

Laurel SOAP MANUFACTURING CO., INC.
TIOGA, THOMPSON & ALMOND STS., PHILA. 34, PA.

Warehouses: Paterson, N. J., Chattanooga, Tenn., Charlotte, N. C.

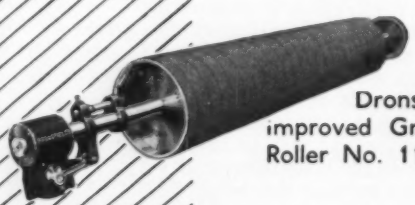
10,000,000 CARDING POINTS
NEED PERFECT GRINDING ROLLS
AND

CARD GRINDING
WITH ABSOLUTE ACCURACY

DRONSFIELD'S PATENT MOTOR-DRIVEN FLAT SURFACE GRINDING MACHINE No. 241.

Designed for grinding revolving flats—four simultaneously—dismounted from the cards. Absolute precision in setting is the aim.

Dronsfield's Patent - Traverse Wheel Grinder, No. 120. *—if requested can be supplied fitted with ball bearings.*



Dronsfield's Improved Grinding Roller No. 112.

Made by
DRONSFIELD BROS LTD.
OLDHAM . ENGLAND

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JOHN HETHERINGTON & SONS. INC.
N Marietta St. Ext. Gastonia, N.C.
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"ATLAS" AND "DRONSFIELDS"

Sinclair Refining Co.	56	M
Socony Mobil Oil Co., Inc.	41	M
Solvay Process Div., Allied Chem. & Dye Corp.	191	C
Sonoco Products Co.	37	E T
Southern Shuttles Div., Steel Heddle Mfg. Co.	161	R
Speedline Stainless Steel Fittings Div., H. T. Potts Co.	235	H
Staley Mfg. Co., A. E. 199, 203, 234,	241	C
Standard Chemical Prods., Inc.	183	C
Steel Heddle Mfg. Co.	161	R
Stephens-Adamson Mfg. Co.	75	O Q
Stowe-Woodward, Inc.	145	E
Supreme Knitting Mach. Co., Inc.	212	L
Taylor Fibre Co.	52	O
Taylor Instrument Cos.	64	K
Tennant Co., G. H.	174	D
Textile Hall Corp.	237	N
Textile Machine Works	80	L
Toledo Scale Co.	182	K
Tompkins Bros. Co.	192	L
Torrington Co., The (Bearings)	223	O Q
Towmotor Corp.	69	P
Turbo Machine Co.	82	T
Unionmatex, Textilmaschinen-Union G. M. B. H.	19	E
U. S. Ring Traveler Co.	214	T
U. S. Rubber Co. Mechanical Goods Div.	213	Q
Universal Winding Co.	152	T
Utica Novelty & Mill Specialty Co.	236	E L
Veeder-Root, Inc. 4th Cover		K
Vickers, Inc. Div. of Sperry Rand Corp.	79	E H O
WAK Industries	196	K
Warner & Swasey Co.	63	T
Whitin Machine Works 65,	175	T
Wildman Mfg. Co.	208	L
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Yale & Towne Mfg. Co.	25	P

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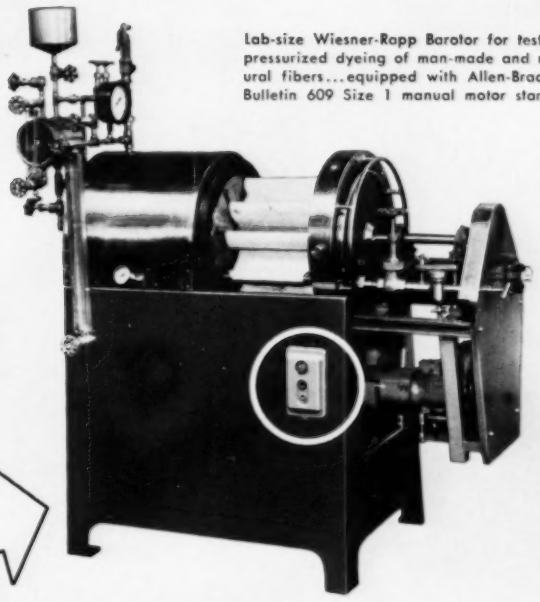
The Sign of
QUALITY
MOTOR CONTROL

Bulletin 609 manual push-button type starter for squirrel cage motors up to 5 hp, 220 v; 7½ hp, 440-550v. Provides accurate and dependable overload protection. Also available as a loom switch.



Lab-size Wiesner-Rapp Barotor for testing pressurized dyeing of man-made and natural fibers...equipped with Allen-Bradley Bulletin 609 Size 1 manual motor starter.

MOTOR STARTERS—Manual and Automatic for Textile Machinery

For gradual, velvet smooth starting of spinning frames or the quick starting of looms, there is an Allen-Bradley manual or automatic starter to satisfy specific needs. All A-B starters have double break, silver alloy contacts that are maintenance free . . . you never have to clean, file, or dress them.

Bulletin 712-713 Combination Starters combine starter and disconnect or circuit breaker in ONE CABINET. They simplify wiring, which means lower installation costs. An additional safety feature—the enclosure cannot be opened unless disconnect is in "off" position. Send for the A-B Handy Catalog.

Allen-Bradley Co.
120 W. Greenfield Ave., Milwaukee 4, Wis.

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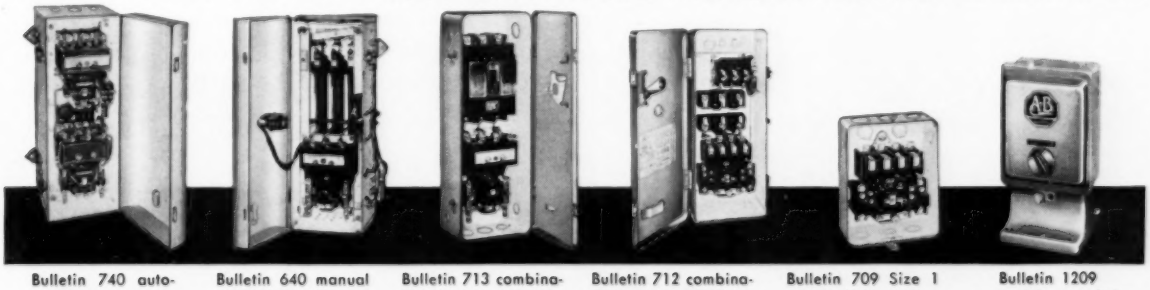
In Canada—
Allen-Bradley Canada Ltd., Galt, Ont.

ALLEN-BRADLEY MANUAL & AUTOMATIC MOTOR CONTROLS FOR TEXTILE MACHINERY



Bulletin 740 automatic velvet smooth motor starter.

Bulletin 640 manual stepless resistance motor starter.

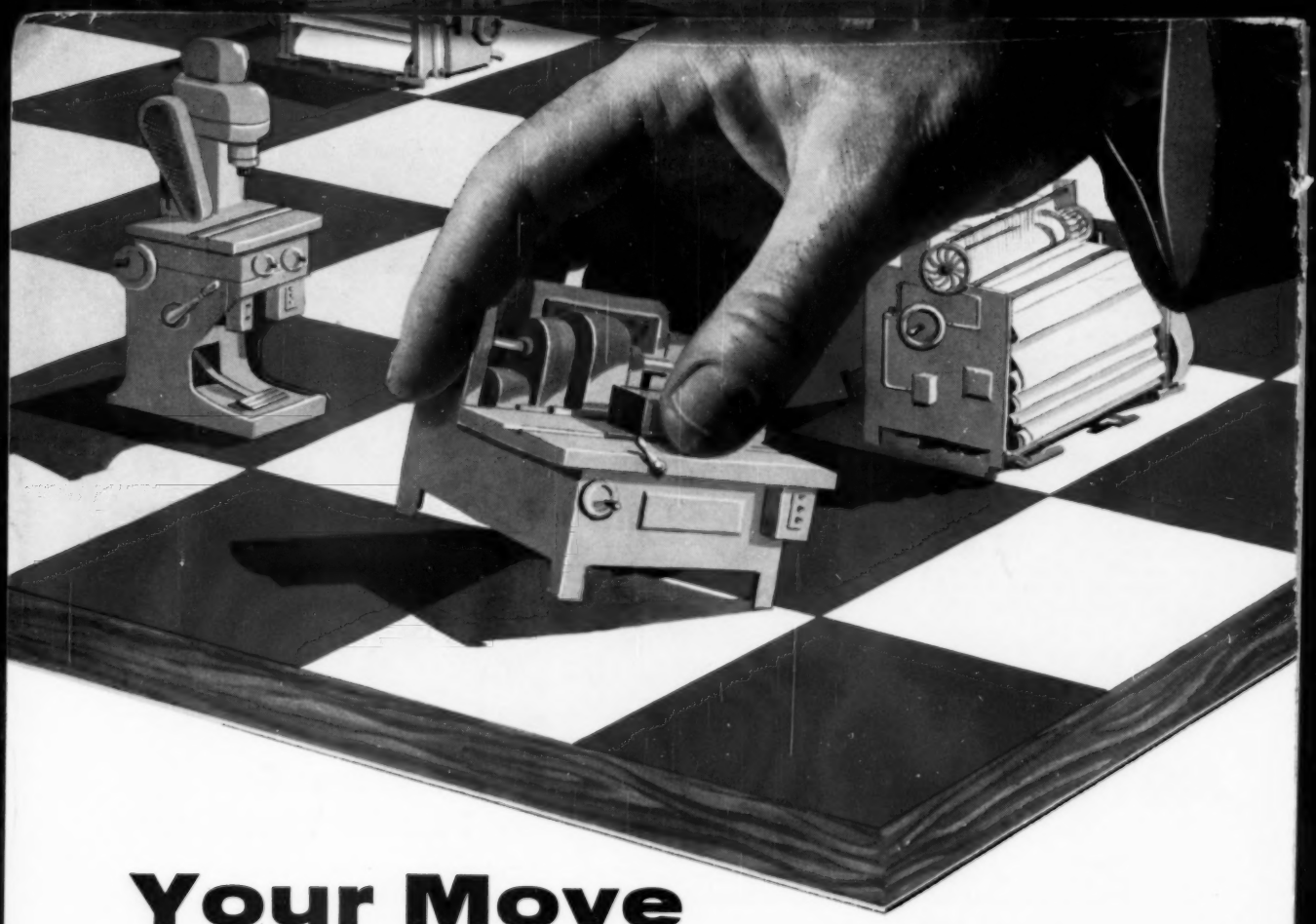
Bulletin 713 combination starter with circuit breaker.

Bulletin 712 combination starter with fused, visible contact, disconnect switch.

Bulletin 709 Size 1 automatic across-the-line motor starter.

Bulletin 1209 manual loom switch—pedestal mounting.

ALLEN-BRADLEY
SOLENOID MOTOR CONTROL
QUALITY



Your Move

...on the chessboard of competition

...modernize your mill now with new American textile machines

Today, successful competition is plainly a matter of new equipment . . . and that means equipment evaluated entirely by its effect on manufacturing cost . . . and on quality of product. Figured otherwise, it can mean the difference between survival . . . *and sudden death* . . . for even the most modern-*looking* mill.

But why should any risk be taken? Never has there been a time when management could modernize so advantageously and economically. For today the productivity — and product-quality — of new machines is highest in history. Yet prices and terms are favorable to *any* modernization plan, short or long term.

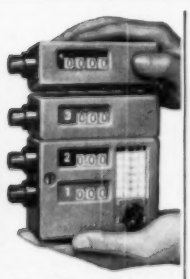
Now, if the U. S. is going to hold its own textile markets, the surest way to hold them is with rugged, trouble-free, high-production *American machinery. Who could ask for anything more?*

VEEDER-ROOT ®
INCORPORATED
HARTFORD 2, CONN. • GREENVILLE, S. C.

Chicago 6, Ill. • New York 19, N. Y. • Montreal 2, Canada
Offices and Agents in Principal Cities

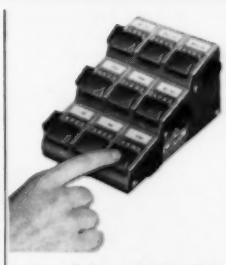
. . . and here's why it's wise to make sure all your New Machines are equipped with NEW VEEDER-ROOT COUNTERS . . .

Modern Veeder-Root Counters . . . for looms, frames, knitting machines and all types of textile mill equipment . . . are built with unmatched Veeder-Root know-how and quality to give accurate facts-and-figures through years of trouble-free service. Count on Veeder-Root for *closest Control* of production and uniformity. Write Veeder-Root for all your counter needs.



2-3-4 Convertible Counters for looms, frames, knitting machines, etc.

Loom Cut Meters for controlling uniform cuts of cloth.



Vary-Tally Multiple Unit Reset Counters for inventory, inspection, and 1,001 other hand-counting jobs.

Double-Wheel Linear Counter for indicating lengths in feet, yards, etc.